“CLINICAL STUDY ON HOMEOPATHIC MANAGEMENT OF BRONCHIAL ASTHMA WITH REFERENCE TO LUNG VOLUME CAPACITY USING SPIROMETRY”.

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT

FOR THE AWARD OF THE DEGREE OF

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IN

PRACTICE OF MEDICINE

By

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SUBMITTED TO

THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI

2019

ENDORSEMENT BY THE HEAD OF THE DEPARTMENT AND THE INSTITUTION

This is to certify that the dissertation entitle **"CLINICAL STUDY ON HOMEOPATHIC MANAGEMENT OF BRONCHIAL ASTHMA WITH REFERENCE TO LUNG VOLUME CAPACITY USING SPIROMETRY ".** is a bonafide work carried out by **Dr. AYYALAMMAI. M,** a student of M.D.(Hom.) in **PRACTICE OF MEDICINE** in the SARADA KRISHNA HOMOEOPATHIC MEDICAL COLLEGE under the supervision and guidance of **Dr. N.V SUGATHAN M.D.(Hom.), Professor Department Of Practice of Medicine** in partial fulfilment of the Regulations for the award of the Degree of **DOCTOR OF MEDICINE (HOMOEOPATHY)** in **PRACTICE OF MEDICINE.** This work confirms to the standards prescribed by THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI.

This has not been submitted in full or part for the award of any degree or diploma from any university.

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This is to certify that the Dissertation entitled **"CLINICAL STUDY ON HOMEOPATHIC MANAGEMENT OF BRONCHIAL ASTHMA WITH REFERENCE TO LUNG VOLUME CAPACITY USING SPIROMETRY"** is a bonafide work of **Dr. AYYALAMMAI.M,** all his work has been carried out under my direct supervision and guidance. His approach to the subject has been sincere, scientific and analytic. This work is recommended for the award of degree of **DOCTOR OF MEDICINE (HOMOEOPATHY)** in **PRACTICE OF MEDICINE** of THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY, CHENNAI.

Place: Kulasekharam

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DECLARATION

I, **Dr.AYYALAMMAI. M** do hereby declare that this Dissertation entitled **"CLINICAL STUDY ON HOMEOPATHIC MANAGEMENT OF BRONCHIAL ASTHMA WITH REFERENCE TO LUNG VOLUME CAPACITY USING SPIROMETRY** is a bonafide work carried out by me under the direct supervision and guidance of **Dr.N.V.SUGATHAN M.D.(Hom.), Professor, Department Of Practice of medicine**, in partial fulfillment of the Regulations for the award of degree of **DOCTOR OF MEDICINE(HOMOEOPATHY)** in **PRACTICE OF MEDICINE** of The Tamil Nadu Dr. M.G.R Medical University, Chennai. This has not been submitted in full or part for the award of any degree or diploma from any University.

Place: Kulasekharam

ABSTRACT

Bronchial asthma is airway inflammatory, increased hyper reactivity and obstructive airway disease 5-10% globally health problem . “Asthma is a chronic inflammatory disorder of the airways hyper responsiveness (AHR) that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment”lung volume changes are observed by spirometry before and after treatment of homoeopathy.

MAERIALS AND METHODS:

METHODOLOGY: Total sample of 30 patients are selected from the Out Patient Department, In Patient Department, RHC department of Sarada Krishna Homoeopathic Medical College Based on inclusive criteria. The patient will be categorized 1-30 before treatment, 1A -30A After treatment underwent spirometry. The cases were analyzed, evaluated and remedy was prescribed. Assessment was done in every one-month and the symptoms were recorded for the pre and posttest assessment. ‘Paired t test' was accomplished for the Statistical Analysis.

RESULT & CONCLUSION:

Evidently, among the 30 cases under study, 25 cases (87%) shows marked improvement, Majority of screened patients in which 20 were Females and 10 were males. The common associated complaints are difficulty in breathing, cough almost dry, sneezing , obstruction in nose. All the cases were evaluated frequently in 6 months interval and changes were recorded. The medicines, which are found to be

more effective, are ARS ALB and NATRUM SULPH. Medicines are more effective while they are administered in 50 millesimal potency in frequent dose than dry dose. Females are more prone for family history of BA, suppression of skin disease is most important factor for development of BA through layers of suppression. This study provides an evidence to show that there is significant reduction in the disease intensity scores , reduced recurrence of attack and Forced expiratory volume markedly increased after administering Homoeopathic Medicines. Hence, we can infer that Homoeopathic medicines have a very predominant role in effect to change the lung volume capacity in the treatment of bronchial asthma. It is also effective in the reducing recurrence of episodes and improved lung volumes also. In addition, the results are statistically significant.

KEYWORDS:

Bronchial asthma, forced expiratory volume, vital capacity, forced vital capacity, predictive value, Spirometry DisabilityAdjustedLifeYears**,** American Thoraxic Society Standard. **.**

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Practice of medicine, SKHMCH.

TABLE OF CONTENTS

LIST OF FIGURES:

LIST OF TABLES:

LIST OF ABBREVIATIONS USED

SL. NO.	ABBREVIATION	EXPANSION
1.	%	Percentage
2.	<	Aggravation
3.	>	Amelioration
4.	=,A/F	Ailments from
5.	Aqua	Water
6.	D	Dose
7.	Dr	Doctor
8.	gtt	Drops
9.	H/O	History of
10.	hrly	Hourly
11.	bd	Twice a day
12.	mnths	Months
13.	No.	Number
14.	OPD	Outpatient department
15.	IPD	In patient department
16.	SG	Sara globule
17.	SD	Sara disket
18.	SL	SaccharumLactis
19.	yrs	Years
20.	wks	Weeks

21.	C/O	Care of
22.	Kgs	Kilograms
23.	i.e.,	That is
24.	eg.	Example
25.	R	Regular
26.	NR	Nothing Relevant
27.	^{0}C	Degree Celsius
28.	Σ	Sum
29.	m	Meter
30.	§	Aphorism
31.	FEV1	Forced expiratory volume in 1 mint
32.	VC	Vital capacity
33.	FVC	Forced volume capacity
34.	BA	Bronchial asthma
35.	DM	Diabetes Mellitus
36.	HT	hypertension
37.	T2DM	Type 2 Diabetes Mellitus
38.	CAM	Complementary Alternative Medicine
39.	Sl.No.	Serial Number

LIST OF APPENDICES

1. INTRODUCTION

Asthma is dynamic clinical syndrome of body + mind+ spirit. Have cough, wheezing, tightness of chest, shortness of breath intermittent or variable more at night called nocturnal asthma. Exaggerated by dust, pollens , allergens, occupational, intrinsic factors, diet and stress.

Among 7.5 billion of world population counted by worldometer, 325 millions of people are suffered by asthma. "**ASTHMA**" a greek word meaned **breathless** or **breath on open mouth in adulthood**. WHO declared that DALY (Disability Adjusted Life Years) lost 15 million/year by asthma , among 1%globally lost. This is 3 rd commonest cause of death among 10 worldwild. By means of extreme pollution, stressful life style modification, poor unhealthy modernist diet, unwanted vaccination, drug resistance from childhood onwards and more and more suppression.[1][5]

In wonderful homoeopathic remedy can give complete rapid recovery from asthma sufferer have very effective changes in bronchospasm and airway inflammation,not only equal and also more than that of conventional treatment which is proved by lung function test named spirometry.

SPIROMETERY is device to make measurement of FVC (forced volume capacity-total amount of air blow out in breath), FEV1(Forced expiratory volume –Amount of air blow out within mint). TVC (Total volume capacity –ratio between FEV1/FVC).This is more specific and more accurate than peak flow meter. It moniter prognosis of asthma.Depend upon the measurement it lung function is classified as normal/restrictive/obstructive /combined by American Thoraxic Society Standard.

NEED FOR THE STUDY:

Asthma is airway inflammatory, hyper sensitivity and obstructive lung disease due to allergen, stress, suppression, occupational, seasonal, hereditary as etiological background. From previous researches, it is clear that asthma is getting more prevalent and keeping on increasing. Homeopathic constitutional remedy can give rapid, effective recovery for asthma in various type successfully. CORTICOSTEROID inhalers have user defect, side effects, dependency and high expensive to asthma sufferer. To avoid this and to establish homeopathic management in asthma proved by lung function test, which is non invasive, in expensive and more accurate than peak flow meter called spirometry which one equal and more than that of conventional corticosteroid inhalers.

Homoeopathy faced criticism in world wide due to high dilution medicine and lack of credible clinical evidence. Its important to provide data on modern scientific parameter, also should retain the confidence of public. In this study gave the evidence of how homoeopathy not only improve the case clinically , but also improved on scientific parameter through spirogram in the management of BA.

2. AIMS AND OBJECTIVES

AIMS :

 To know the effect of lung volume capacity especially in bronchial asthma using spirometry after dynamic homoeopathic remedy

OBJECTIVES:

 To know the Homeopathic remedy have equal and more effective than other conventional treatment in asthma.

 To know the improvement in FVC after homeopathic remedy in asthma, to asses prognosis of asthma in its severity and control.

REVIEW OF LITERATURE

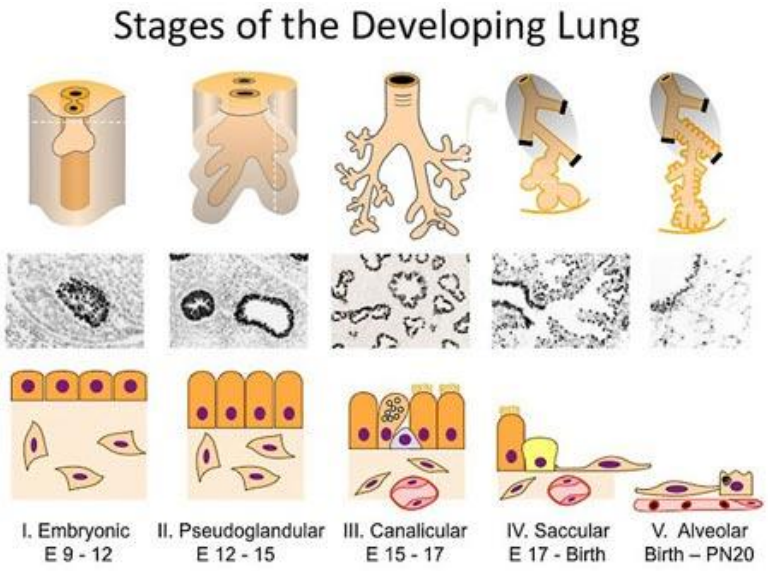
The respiratory system plays a vital role in the exchange of respiratory gases of O2 and CO2 in the human body. It allows for the inhalation of gases such as oxygen in the air, transported by the blood around the body to supply tissues and cells, and the exhalation of waste gases such as carbon dioxide into the air.

Respiration can be divided into four major functions: (1) pulmonary ventilation, which means the inflow and outflow of air between the atmosphere and the lung alveoli (2) diffusion of oxygen and carbon dioxide between the alveoli and the blood (3) transport of oxygen and carbon dioxide in the blood and body fluids to and from the body's tissue cells (4) regulation of ventilation and other facets of respiration [3].

Structurally, the respiratory system consists of two parts: The upper respiratory system includes the nose, pharynx, and associated structures. The lower respiratory system includes the larynx, trachea, bronchi and lungs. The respiratory zone consists of tissues within the lungs, where gas exchange occurs. These include the respiratory bronchioles, alveolar ducts, alveolar sacs and alveoli. [2]

3.1. EMBRYOLOGY

The respiratory system does not carry out its physiological function (of gas exchange) until after birth. At about four weeks of development, the respiratory system begins as an outgrowth of the foregut just anterior to the pharynx.This outgrowth is called the respiratory diverticulum or lung bud.(14)



The respiratory system develops from the diverticulam of the foregut, first as midline groove tracheobronchial groove. It has 6 pharyngeal arches. Distal part separated from esophagus, cranial part developed as pharynx. Free caudal end become bifid each subdivision called lung bud. It forms the bronchi and lung parenchyma. Cranial part form larynx and trachea. 2 primary division of the respiratory division form right and left principal bronchi. Left division more transverse and divided 2 lobar bronchioles, rt have 3 lobar bronchioles. Lungs formed by further subdivision of lobar bronchi .Totally 17 number of division of each bronchus before birth. 6 more after birth . Bronchial tree alveoli formed by expansion of terminal part of tree. Lung parenchyma developed from lobar bronchi, separated from mesoderm by connective tissue called pleura separated by fissures. IN FETAL LIFE all division Of bronchial tree lined by cubical epithelium. It is canalicular phase of lung development. After birth alveoli become dilated and lining epithelium become thin. Some cells produce surfactant form thin layer of alveoli which reduce surface tension. Alveoli continue to multiply until 300 million have formed. This number is reached when the child is about 8 years old.[21]

3.2. FUNCTIONAL ANATOMY AND PHYSIOLOGY:

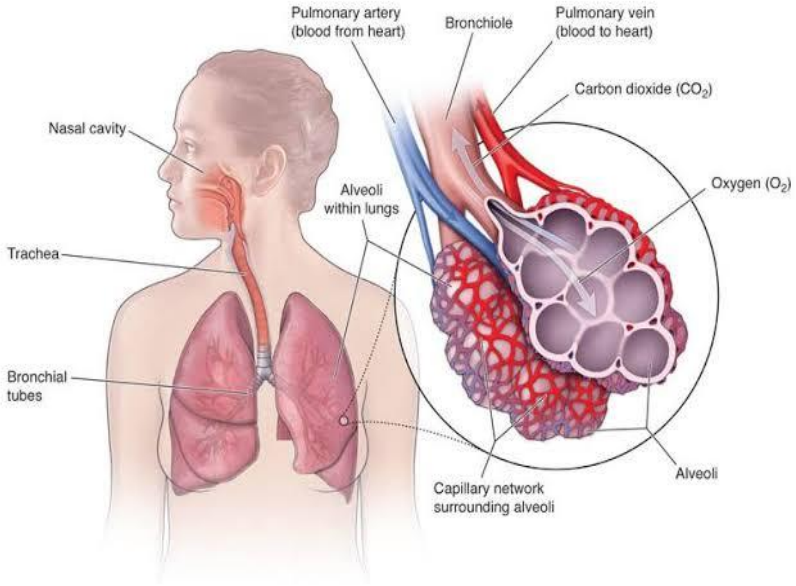
The lungs occupy the upper two-thirds of the bony thorax, bounded medially by the spine, the heart and the mediastinum and inferiorly by the diaphragm. During breathing, free movement of the lung surface relative to the chest wall is facilitated by sliding contact between the parietal and visceral pleura. [13]

Inspiration involves downward contraction of the dome-shaped diaphragm (innervated by the phrenic nerves originating from C3, 4 and 5) and upward, outward movement of the ribs on the cost vertebral joints, caused by contraction of the external intercostals muscles (innervated by intercostal nerves originating from the thoracic spinal cord).[26]

Expiration is largely passive, driven by elastic recoil of the lungs. The conducting airways from the nose to the alveoli connect the external environment with the extensive, thin and vulnerable alveolar surface. As air is inhaled through the upper airways, it is filtered in the nose, saturated with water vapour; partial recovery of this heat and moisture occurs on expiration. Total airway cross-section is smallest in the glottis and trachea, making the central airway particularly vulnerable to obstruction by foreign bodies and tumors. Normal breath sounds originate mainly from the rapid turbulent airflow in the larynx, trachea and main bronchi. The multitude of small airways within the lung parenchyma has a very large combined cross-sectional area (over 300 cm2 in the third-generation respiratory bronchioles), resulting in very slow flow rates. Airflow is normally silent here, and gas transport occurs largely by diffusion in the final generations. The acinus is the gas exchange unit of the lung and comprises branching respiratory bronchioles and clusters of

alveoli. Here the air makes close contact with the blood in the pulmonary capillaries (gas-toblood distance < 0.4 µm), and oxygen uptake and CO2 excretion occur.

The alveoli are lined with flattened epithelial cells (type I pneumocytes) and a few, more cuboidal, type II pneumocytes. The latter produce surfactant, which is a mixture of phospholipids that reduces surface tension and counteracts the tendency of alveoli to collapse under surface tension. Type II pneumocytes can divide to reconstitute type I pneumocytes after lung injury. [3], [17]



STRUCTURE OF ALVEOLI [3]

LUNGS:

The lungs are a pair of respiratory organs situated in the thoracic cavity. The right and left lung are separated by mediastinum. The right lung weighs about 700g; it is about 50-100g heavier than left lung.[5] Each lung has a blunt apex, which projects upward into the neck for about 1in. (2.5cm) above the clavicle; a concave base that sits on the diaphragm; a convex costal

surface, which corresponds to the concave chest wall; and a concave mediastinal surface, which is moulded to the pericardium and other mediastinal structures. At about the middle of this surface is the hilum[6] Each lung is enclosed and protected by pleural membrane. The superficial layer, called the parietal pleura, lines the wall of the thoracic cavity; the deep layer, the visceral pleura, covers the lungs. Between the visceral and parietal pleurae is a small space which contains a small amount of lubricating fluid secreted by the membranes which reduces friction between the membranes, allowing them to slide easily over one another during breathing.

Lungs are divided into lobes by fissures. Both lungs have an oblique fissure, which extends inferiorly and anteriorly; the right lung also has a horizontal fissure. The oblique fissure in the left lung separates the superior lobe from the inferior lobe. In the right lung, the superior part of the oblique fissure separates the superior lobe from the inferior lobe; the inferior part of the oblique fissure separates the inferior lobe from the middle lobe, which is bordered superiorly by the horizontal fissure. Each lobe receives its own secondary (lobar) bronchus. The right primary bronchus gives rise to three secondary (lobar) bronchi called the superior, middle, and inferior secondary (lobar) bronchi and the left primary bronchus gives rise to superior and inferior secondary (lobar) bronchi. Within the lung, the secondary bronchi give rise to the tertiary (segmental) bronchi, which are constant in both origin and distribution there are 10 tertiary bronchi in each lung. The segment of lung tissue that each tertiary bronchus supplies is called a Broncho pulmonary segment. Each Broncho pulmonary segment of the lungs has many small compartments called lobules; terminal bronchioles subdivide into microscopic

branches called respiratory bronchioles. Respiratory bronchioles in turn subdivide into several (2–11) alveolar ducts. [2]

An alveolus is a cup-shaped out pouching lined by simple squamous epithelium and supported by a thin elastic basement membrane. The walls of alveoli consist of two types of alveolar epithelial cells as type I alveolar cells are simple squamous epithelial cells that form a nearly continuous lining of the alveolar wall. Type II alveolar cells, also called septal cells, are fewer in number and are found between type I alveolar cells. The thin type I alveolar cells are the main sites of gas exchange. Type II alveolar cells, rounded or cuboidal epithelial cells with free surfaces containing microvilli, secrete alveolar fluid, which keeps the surface between the cells and the air moist. [2], The pulmonary arteries, through their capillary plexus, are entirely concerned with alveolar gaseous exchange, while the nutrient supply of the lung parenchyma is provided by the bronchial arteries. The pulmonary vein tributaries derive partly from the capillaries of the bronchial and the pulmonary arteries. The bronchial veins drain the larger bronchi. The lymphatics of the lungs drain into the nodes lying at the bifurcations of the larger bronchi, then to the tracheobronchial nodes and then into the broncho mediastinal lymph trunk on each side. These usually drain directly into the junction of the internal jugular and subclavian veins on each side, but may drain, on the right, into the right lymph trunk and, on the left, into the thoracic duct. If the subcarinal node is the site of secondary deposits it gives the typical bronchoscopic sign of widening of the carina .The principal function of the sympathetic (T2-T4) supply to the lung is broncho dilatation, while the vagus fibres act as stretch receptors.[7]

Lung mechanics:

Healthy alveolar walls contain a fine network of elastin and collagen fibres . The volume of the lungs at the end of a tidal (‘normal’) breath out is called the functional residual capacity (FRC). At this volume, the inward elastic recoil of the lungs is balanced by the resistance of the chest wall causing negative pressure in the pleural space. Elastin fibres allow the lung to be easily distended at physiological lung volumes, but collagen fibres cause increasing stiffness as full inflation is approached so that, in health, the maximum inspiratory volume is limited by the lung .Within the lung, the weight of tissue compresses the dependent regions and distends the uppermost parts, so a greater portion of an inhaled breath passes to the basal regions, which also receive the greatest blood flow as a result of gravity. Elastin fibres in alveolar walls maintain small airway patency. Even in health, however, these small airways narrow during expiration because they are surrounded by alveoli at higher pressure. The volume that can be exhaled is thus limited purely by the expiratory muscles to distort the chest wall inwards.

Control of breathing :

The respiratory motor neurons in the posterior medulla oblongata are the origin of the respiratory cycle.

• Central chemoreceptors in the ventrolateral medulla sense the pH of the cerebrospinal fluid (CSF) and are indirectly stimulated by a rise in arterial PCO2.

• The carotid bodies sense hypoxaemia but are mainly activated by arterial PO2 values below 8 KPa (60 mmHg). They are also sensitised to hypoxia by raised arterial PCO2.

• Muscle spindles in the respiratory muscles sense changes in mechanical load .

• Vagal sensory fibres from the lung may be stimulated by stretch, by inhaled toxins or by disease processes in the interstitium.

• Cortical (volitional) and limbic (emotional) influences can override the automatic control of breathing. [16], [17]

Ventilation/perfusion matching and the pulmonary circulation :

To achieve optimal gas exchange within the lungs, the regional distribution of ventilation and perfusion must be matched. Hypoxia constricts pulmonary arterioles and airway CO2 dilates bronchi, helping to maintain good regional matching of ventilation and perfusion. The pulmonary circulation in health operates at low pressure (approximately 24/9 mmHg). Pulmonary hypertension occurs when vessels are destroyed by emphysema, obstructed by thrombus, involved in interstitial inflammation or thickened by pulmonary vascular disease.

Lung defences:

Upper airway defences:

- Large airborne particles are trapped by nasal hairs, and smaller particles settling on the mucosa are cleared towards the oropharynx by the columnar ciliated epithelium which covers the turbinates and septum

- During cough, expiratory muscle effort against a closed glottis results in high intrathoracic pressure, which is then released explosively.

- The flexible posterior tracheal wall is pushed inwards by the high surrounding pressure, which reduces tracheal cross-section and thus maximises the airspeed to achieve effective expectoration.

- The larynx also acts as a sphincter, protecting the airway during swallowing and vomiting.

Lower airway defences:

- The sterility, structure and function of the lower airways are maintained by close cooperation between the innate and adaptive immune responses.
- The innate response in the lungs is characterised by a number of non-specific defence mechanisms.
- Inhaled particulate matter is trapped in airway mucus and cleared by the mucociliary escalator.
- Airway secretions contain an array of antimicrobial peptides (such as defensins, immunoglobulin A (IgA) and lysozyme), antiproteinases and antioxidants.

- Many assist with the opsonisation and killing of bacteria, and the regulation of the powerful proteolytic enzymes secreted by inflammatory cells.
- In particular, α1antiproteinase (A1Pi) regulates neutrophil elastase, and deficiency of this may be associated with premature emphysema.
- Macrophages engulf microbes, organic dusts and other particulate matter. They are unable to digest inorganic agents, such as asbestos or silica, which lead to their death and the release of powerful proteolytic enzymes that cause parenchymal damage.
- Neutrophil numbers in the airway are low, but the pulmonary circulation contains a marginated pool that may be recruited rapidly in response to bacterial infection.
- Adaptive immunity is characterised by the specificity of the response and the development of memory.
- Lung dendritic cells facilitate antigen presentation to T and B lymphocytes. [3],[2]

LUNG VOLUMES, CAPACITIES AND ALVEOLAR VENTILATION

Volume of air taken in and given out during normal	**Tidal volume**
Tidal volume calculated by	**Inspiratory capacity minus inspiratory reserve volume**
Tidal Volume in both Men and women	**500 ml**

Resting tidal ventilation	**5 L/min**
Expiratory reserve volume	**1000 ml**
Inspiratory reserve volume	**3300 ml**
Residual volume	**1200 ml**
Inspiratory capacity (TV + IRV)	**3800 ml**
Normal vital capacity (TV + IRV + ERV)	**4800 ml**
Functional residual capacity (ERV + RV	**2200 ml**
Total lung capacity	**6000 ml**
Amount of air in lungs at the end of tidal breath	**FRC**
Functional residual capacity is	**Volume remaining of normal respiration**
Functional residual capacity	**ERV + RV= 2.2 L**
Total alveolar volume in litre per minute	**4.4 L**

Pulmonary volumes

1.The tidal volume is the volume of air inspired or expired with each normal breath; it amounts to about 500 millilitres in the adult male.

2.The inspiratory reserve volume is the extra volume of air that can be inspired over and above the normal tidal volume when the person inspires with full force; it is usually equal to about 3000 millilitres.

3.The expiratory reserve volume is the maximum volume of air that can be expired after the end of a normal tidal expiration; this normally amounts to about 1100 millilitres.

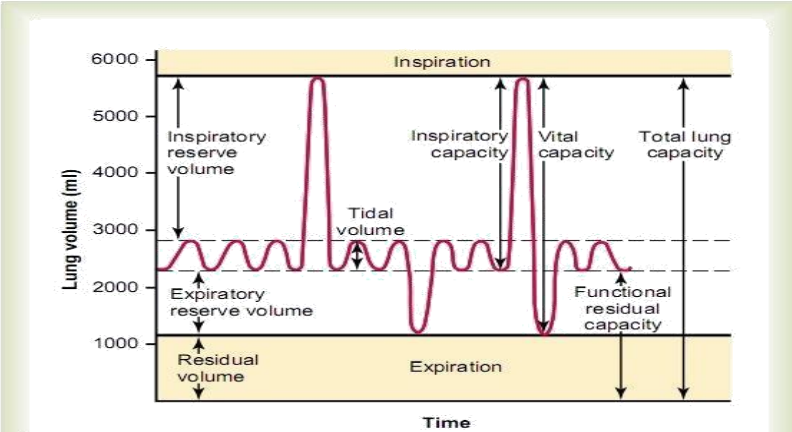
4.The residual volume is the volume of air remaining in the lungs after the most forceful expiration; this volume averages about 1200 millilitres. [2]

Pulmonary capacities:

1. The inspiratory capacity equals the tidal volume plus the inspiratory reserve volume. This is the amount of air (about 3500 millilitres) a person can breathe in, beginning at the normal expiratory level and distending the lungs to the maximum amount.

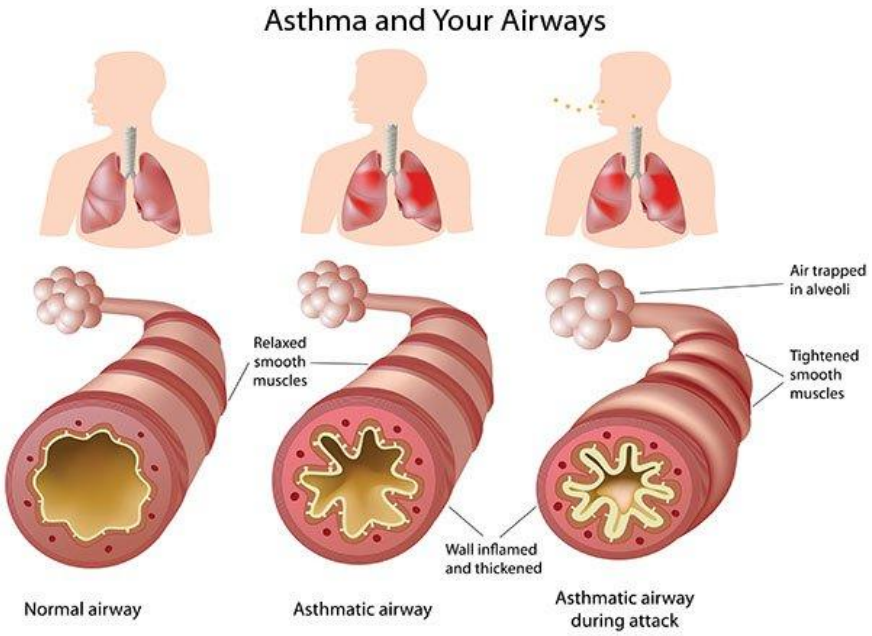
   The functional residual capacity equals the expiratory reserve volume plus the residual volume. This is the amount of air that remains in the lungs at the end of normal expiration (about 2300 millilitres).

2. The vital capacity equals the inspiratory reserve volume plus the tidal volume plus the expiratory reserve volume 4600 millilitres. [16], [17]
3. The total lung capacity is the maximum volume to which the lungs can be expanded with the greatest possible effort (about 5800 millilitres); it is equal to the vital capacity plus the residual volume. [2]



LUNG VOLUMES AND CAPACITY

BRONCHIALASTHMA



Respiratory disease is responsible for a major burden of morbidity and untimely death, with conditions such as tuberculosis, pandemic influenza and pneumonia the most important in world health terms. The increasing prevalence of allergy, asthma and chronic obstructive pulmonary disease (COPD) contributes to the overall burden of chronic disease in the community. By 2025, the number of cigarette smokers worldwide is anticipated to increase to 1.5 billion, ensuring a growing burden of tobacco-related respiratory conditions. Respiratory disease covers a breadth of pathologies, including infectious, inflammatory, neoplastic and degenerative

processes. Bronchial asthma is airway inflammatory, increased hyper reactivity and obstructive airway disease 5-10% globally health problem. According to the Global Initiative for Asthma Management and prevention (GINA), a definition of Asthma is given as; “Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role.

The chronic inflammation is associated with airway hyper responsiveness (AHR) that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often reversible either spontaneously or with treatment”

EPIDIMYOLOGY:

The National Health Interview Survey (NHIS) data on asthma prevalence in the United States of America demonstrate an almost doubling of asthma prevalence over the last quarter century, from 3.2 percent per 100 population in 1981 to 5.5 percent per 100 in 1996. One third of those affiliated with asthma are children under the age of 18 years. A study conducted in 2006 by Sidney S Burman shows that there has been a sharp increase in the global prevalence, morbidity, mortality, and economic burden associated with asthma over the last 40 years, particularly in children12. Approximately 300 million people worldwide currently have asthma, and its prevalence increases by 50% every decade. According to the National Family Health Survey-2 report the estimated prevalence of asthma in India is 2468 per 100,000 persons. The increasing number of hospital admissions for asthma, which are most pronounced in young children, reflect an increase in severe asthma, poor disease

management, and poverty. Worldwide, approximately 180,000 deaths annually are attributable to asthma, although overall mortality rates have fallen since the 1980s [11] [14], [21]

TYPES OF ASTHMA:

 Allergic asthma [12]

 Occupational asthma

 Childhood asthma

 Exercise induced asthma(EIA)

 Acute severe asthma

 Nocturnal asthma

 Cough variant asthma

RISK FACTORS:

 Genetic predisposition-IgE antibody production against house dust, mites, fungi, pollen, animal derived protein.

 Viral infection (LRI), respiratory syncytial virus

 INTRINSIC asthma in sinusitis, nasal polyp, drug induced

 Antioxidants deficiency Exposure to pets, dust mites[1]

ETIOLOGICAL FACTORS:

Allergens: Allergic asthma is dependent on an IgE response controlled by T and B lymphocytes and activated by the interaction of antigen with mast cell–bound IgE molecules.

Pharmacologic Stimuli: The drugs most commonly associated with the Induction of acute episodes of asthma are aspirin, coloring agents such as tartrazine, adrenergic antagonists, and sulfiting agents.

Environment and Air Pollution: climatic conditions that promote the concentration of atmospheric pollutants and antigens [15].

Occupational Factors: acute and chronic airway obstruction have been reported to follow exposure to a large number of compounds used in many types of industrial processes.

Infections: Respiratory viruses and not bacteria or allergy to microorganisms are the major etiologic factors. In young children, the most important infectious agents are respiratory syncytial virus and parainfluenza virus [13

PATHOGENESIS :

Airway inflammation produced IgE linked with FcE receptors release mast cell protease, histamine and pro inflammatory cytokinase, esinophil produce charcot-leyden crystals found in sputum, lymphocytes, mast cell, neutrophils more in near fatal asthma, occupational asthma leads poor response in corticosteroids. Oedema,hypertrophy of smooth muscle leads airway remodeling. Thickened basement membrane, epithelial damage leads creola bodies and curschmanns spiral found in asthma. Mucous plugging, airway hyperreactivity and non-adrenergic non-

cholinergic nerve defect leads broncho constriction and reversible airway limitation. In acute severe asthma leads remodeling, irreversible changes in lung may occur.

3.4.2. PATHOPHYSIOLOGY:

The pathophysiologic hallmark of asthma is a reduction in airway diameter brought about by contraction of smooth muscle, vascular congestion, edema of the bronchial wall, and thick, tenacious secretions. The net result is an increase in airway resistance, a decrease in forced expiratory volumes and flow rates, hyperinflation of the lungs and thorax, increased work of breathing, alterations in respiratory muscle function, changes in elastic recoil, abnormal distribution of both ventilation and pulmonary blood flow with mismatched ratios, and altered arterial blood gas concentrations. Thus, although asthma is considered to be primarily a disease of airways, virtually all aspects of pulmonary function are compromised during an acute attack [13].

PATHOLOGICAL CHANGES IN ASTHMA:

FEATURES OF BRONCHIAL ASTHMA :

Asthma is dynamic clinical syndrome of body + mind+ spirit. Have cough, wheezing, tightness of chest, shortness of breath intermittent or variable more at night called nocturnal asthma. Exaggerated by dust, pollens , allergens, occupational, intrinsic factors, diet and stress.[4] Asthma is a syndrome rather than a condition. It is an episodic disease, with acute exacerbations, interspersed with symptom-free periods. Typically most attacks are short lived, lasting minutes to hours, and clinically the patient seems to recover completely after an attack. However there can be a phase in which the patient experiences some degree of airway obstruction daily which is termed as **chronic asthma**. This phase can be mild, with or without superimposed severe episodes, or much more serious with severe obstruction persisting for days or weeks, the latter condition is known as ***acute severe asthma*.** [26]

INVESTIGATION :

- Pulmonary function test-PFM, SPIROMETER.
- Allergic test-skin prick test
- Nitric oxide test
- Arterial blood gas analysis
- Sputum esinophil
- Xray chest ,CT
- bronchoscopy, Laryngoscopy,Positron emission tomography
- Provacative testing for exercise and cold induced test

LUNG FUNCTION TEST:

Measurements of lung function provide valuable information.

- ✓ Helps to diagnosis
- ✓ Severity of the condition
- ✓ Disease prognosis
- ✓ Regular monitoring in lung function.

- To measure the size of the lung
- Measure the air into and out of the airway

- Efficiency of lung in process of gas exchange.

PEAK EXPIRATORY FLOW METERS: Here patient should be instructed to record peak flow readings after rising in the morning and before retiring in the evening. A diurnal variation (lowest in the morning) of more than 20% is considered diagnostic. Normal reading as per mentioned in American lung association reveals 80 to 100 L/min as mild level, 50 to 79 L/min as moderate level and below 50 L/min as severe level. [17] Measurement of peak expiratory flow rate gives an idea of how narrow or obstructed a person's airways are by measuring the maximum rate at which they can blow air into a peak flow meter after a deep breath. [7], [9]

CLASSIFICATION OF ASTHMA : [29]

ICD-1O CC CODE:

- Mild intermittent- J45.2X
- Mild persistent – J45.3X
- Moderate persistent- J45.4X [28]

- Severepersistent –J45.5X

- Unspecified J45.90x
  - X=0 uncomplicated
  - X=1 WITH exacerbation
  - X= 2 with status

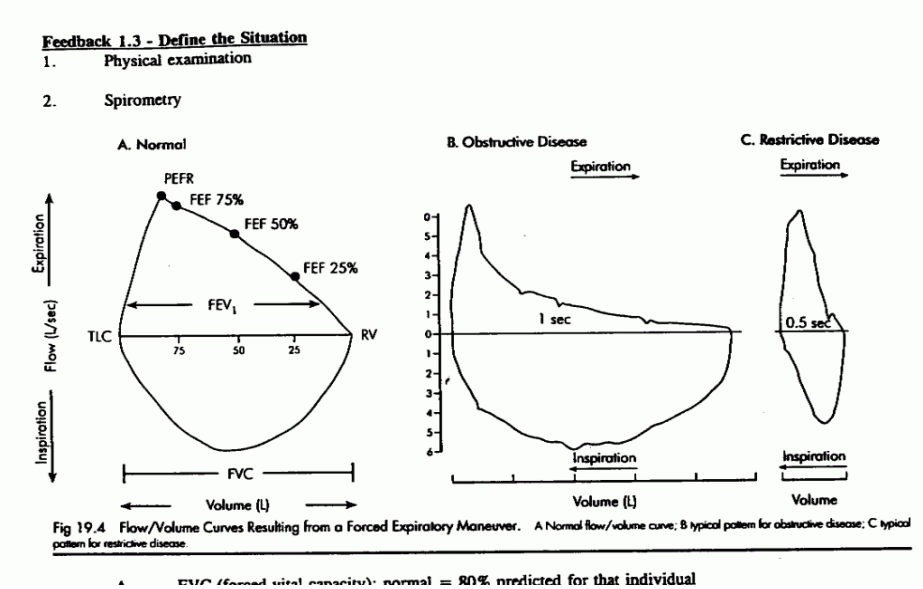


Fig 19.4 Flow/Volume Curves Resulting from a Forced Expiratory Maneuver. A Normal flow/volume curve; B typical pattern for obstructive disease; C typical pattern for restrictive disease.

A. FVC (forced vital capacity): normal = 80% predicted for that individual

MANAGEMENT GOALS: [10]

- Achieve control of symptoms
- Reduced asthma mortality
- Prevent remodeling
- Restore normal pulmonary function
- Avoid acute severe asthma /exacerbation
- Avoid abuse of medication and dependency
- Achieve best quality of life without limitation

Management –non pharmacological level:

 Structural patient education and self management Removal of allergen Long term oxygen therapy Vaccination for pneumococci Respiratory therapy/ physiotherapy Family therapy Smoking cessation Weight loss in obesity Good dietary advice-fish oil in third trimester reduce risk of asthma in first 5 yrs of child ,Anti-oxidants ,alpha 3 fatty died ,vit D rich diet is advised Avoid stress. Positive and negative emotions triggers asthma omega 6 veg oil,sugar,toxic fats ,salts should be avoided [7] [9] [28]

CONVENTIONAL MANAGEMENT:

Relievers group-beta 2 sympathetic agents (salbutamol,theophyline,formoteral) Controllers group –ICS (inhaled corticosteroid),LABA.

ADVERSE EFFECTS: :[9] [3]

o Fine tremor o Agitation o Tachycardia/palpitation o Oral thrush

o Hoarseness o Suppression of adrenocortical function o Hypertension /sodium retention/worsening DM o Gastro esophageal reflex.

SPIROMETRY:

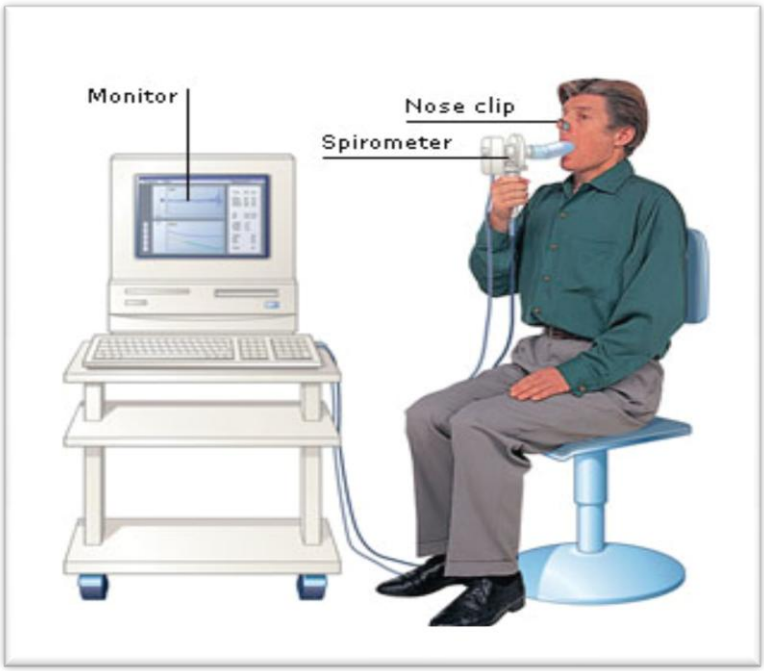
Spirometry is one of lung function test to monitor how the lung is work by speed of breath and amount of air to inhale and exhale which is affected in Asthma, COPD, Cystic fibrosis and bronchiectasis. SPIROMETER is device to make measurement of FVC(forced volume capacity-total amount of air blow out in breath), FEV1(Forced expiratory volume –Amount of air blow out within mint). TVC

(Total volume capacity –ratio between FEV1/FVC).This is more specific and more accurate than peak flow meter. It moniter prognosis of asthma. [7], [9]

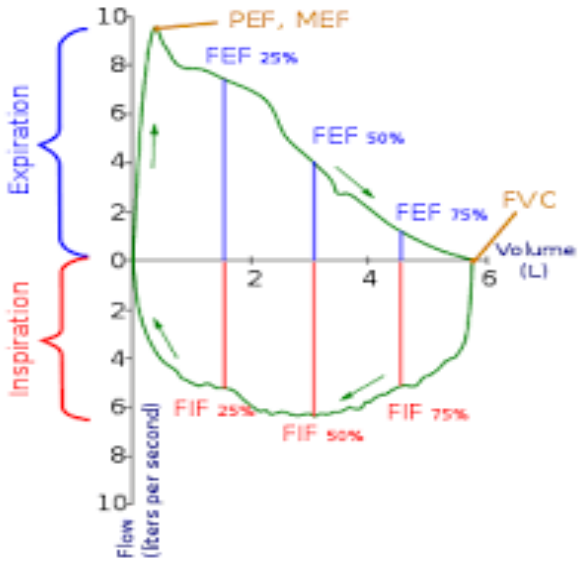
SPIROMETRY

measures the amount of air could exhale after a maximum inspiration. Blow out into spirometry , this volume is called vital capacity. Amount of air after full inspiration is called total lung capacity. Residual volume is amount of air remaining after full expiration. FORCED VITAL CAPACITY is measured after the hard blow into spirometry. VC and FVC are identical in normal lung but in obstructive lung disease FVC is less than VC Compression of airway during expiration in BA , COPD. VOLUME in litres in X axis time in second in Y axis. volume of air breathed out in first second of forced expiration called as forced expiration in first second. FEV1 . in normal lung FEV 1 is > 70%. In obstructive lungdisease FEVI/ FVC is reduced due to prolonged expiration. In restrictive lung disease FEV1 and FVC reduced in propotion of each others , so ratio is remains normal.

SPIROMETER



SPIROGRAM NORMAL CURVE :



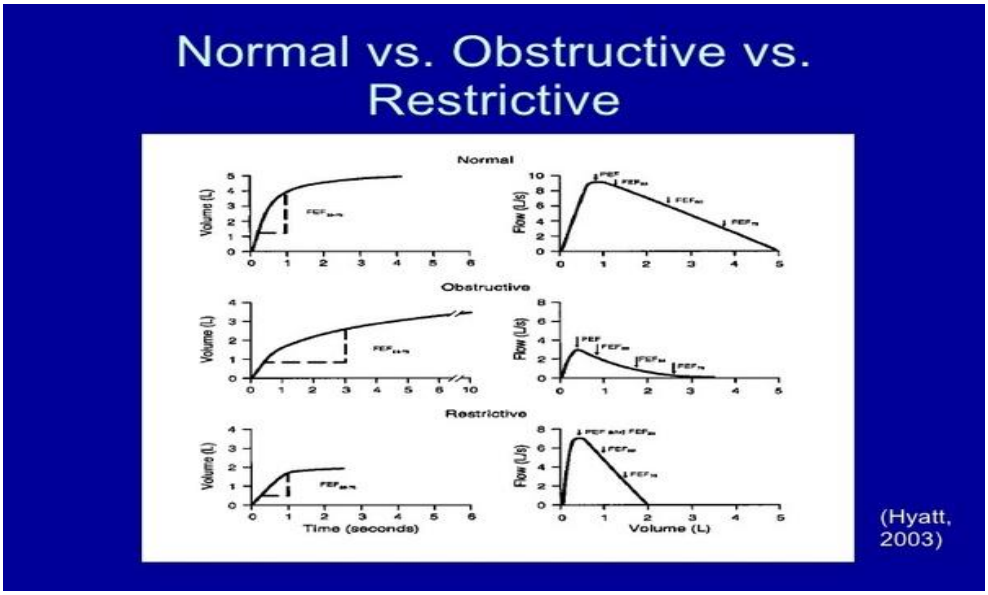
INSTRUCTIONS FOLLOWED IN RECORDING A SPIROMETRY: [35]

- Stand or sit up straight.
- Make sure the indicator is at the bottom of the meter (zero).
- Take a deep breath in, filling the lungs completely.
- Place the mouthpiece in your mouth, lightly bite with your teeth and close your lips on it. Be sure your tongue is away from the mouthpiece.
- Blast the air out as hard and as fast as possible in a single blow for one mint than followed by deep inspiration.
- Remove the meter from your mouth.
- Graf recorded in the screen as per volume of air exhaled in spirometre.
- Record the number that appears on the meter and then repeat the steps two times.
- Record the highest of the three readings. This reading gives the peak expiratory flow (PEFR). [7], [9], [28]

Spirometry is indicated for the following reasons:

- To measure bronchial responsiveness in patients suspected of having asthma
- To diagnose and differentiate between obstructive lung disease and restrictive lung disease.
- diagnose the vocal cord dysfunction[17][7],[9].

PULMONARY FINDINGS IN ASTHMA [23,24]:



Reduced FVC, Reduced FEV1, FEV1/FVC ratio < 80%, Increase in Residual Volume and Total Lung Capacity.

DIAGNOSTIC CRITERIA FOR ASTHMA:

CLINICAL FEATURES THE PROBABILITY OF ASTHMA:

- more than one of following symptom like wheezing, breathlessness, cough ,tightness of chest.
- More at night and in early morning.

- ♦ Symptoms in response to cold air, allergen, exercise.
- ♦ H/O of atopic disorder.
- ♦ Widespread wheeze heard while auscultation
- ♦ Unexplained peripheral blood eosinophilia.

Compatible clinical history

plus either/or:

- FEV1 ≥ 15%* (and 200 mL) increase following administration of a bronchodilator/trial of corticosteroids
- > 20% diurnal variation on ≥ 3 days in a week for 2 weeks on PEF diary
- FEV1 ≥ 15% decrease after 6 mins of exercise.

Limitation for spirometry:

- ✓ Recent eye surgery
- ✓ Myocardial infarction
- ✓ Abdominal and thoracic surgery
- ✓ Hypertension
- ✓ Smoking recently

3.4.6. DIFFERENTIAL DIAGNOSIS FOR ASTHMA:

Many other conditions can cause symptoms similar to those of asthma. In children, other upper airway diseases such as **allergic rhinitis and sinusitis** should be considered as well as other causes of airway obstruction including: **foreign body aspiration, tracheal stenosis or laryngo-tracheo-malacia, vascular rings, enlarged lymph nodes or neck masses**. In adults, **COPD, congestive heart failure, airway masses, as well as drug-induced coughing due to ACE inhibitors beta blockers, NSAID, steroids aspirin, eyedrops** should be considered. **Chronic obstructive pulmonary disease** can coexist with asthma and can occur as a complication of chronic asthma [16].

3.4.7. PREVENTION:

- Aggravating factors of bronchial asthma should be avoided which includes
- Limiting or completely avoiding smoking and smoke exposure.
- Avoidance of Exposure to pets. It is recommended that pets should be removed from the home if a person has allergic symptoms.
- Minimizing exposure to house dust mite by replacing carpets with floor boards and using mite impermeable bedding.

Reduction of fungal exposure and elimination of cockroaches.[16]

Homoeopathic approach:

 77 th aphorism Hahnemann told that besides chronic miasmatic and drug disease some group of condition which simulate real chronic disease occur in persons ,

 Expose themselves to avoidable noxious influences Addicted to dissipation

 Undergo prolonged obstinence of things neccesary for life

 Resides in unhealthy localities ,marshy distics,housed in cellar ,open air Ruin their health by over exertion of body and mind

 Living in constant state of worry...in this state of ill health is bring upon by removing these things .. Aphorism 210-230 in mental disease management master told that almost all mental and emotional disease are corporeal disease in which symptoms of derangement and disoistion each of them increased while corporeal symptoms are decline .Eg suppression of lung disease leads insanity…

Aphorism 38 teach about suppression …suppression of skin disease may leads to lung disease. According to all these points we treat patient as a whole depend upon totality, dynamic medicine which erradicate tedency of hereditary also.[6] [26], [28]

RELAVENT RESEARCH STUDIES IN BRONCHIAL ASTHMA:

According to" asthma call back survey prevalence of disease among age", adolescence group are above 16 was high in percentage.Under age of 1 which one exposure to bronchial allergy, respiratory infection, broncho pneumonia had more focus of respiratory BA in adolacence have higher intencity.[30]

In the Study of **Sex difference in bronchial asthma** among 8 states in USA by RHODES MOORMAN in" air pollution and respiratory health branch, division of environmental health effects and hazard" , centre of disease controle and prevention in atlando , study concluded that lifetime and current asthma prevalence are higher in females, childhood asthma are reported more often in males in the journal of Asthma volume 42 , 2005 issue 9.[31]

In the lung disease news.com , skin disease atopic dermatitis and susceptibility to allergies have increase risk of asthma, study found that year old infants who have skin disease known as atopic dermatitis are 7 times more likely to developed ASTHMA which is found in the Canadian healthy infants longitudinal developmental child study by Malcolm sears , one of professor in firestone institute of respiratory health at st Joseph healthcare , Hamilton.[29]

In American journal of preventive medicine , this study shows that genetic and hereditary exposure is risk factors for childhood asthma and atopic skin disease , need to preventive care to reduce exposure to environmental factors which is triggering BA. Like this study in our study also had family history of BA for about 45% especially in female groups.[30]

MATERIALS AND METHODS:

STUDY SETTING: This study is designed to evaluate and compare the effectiveness of lung volume capacity before and after homeopathic constitutional remedy in asthma tested by spirometry . The study will be carried out at Out Patient Department (OPD) and Rural health centre (RHC) and In Patient Department (IPD) at Sarada Krishna Homoeopathic Medical College and Hospital.

SELECTION OF SAMPLES: Sample Size: 30 cases

Sampling Technique: Random sampling

STUDY DESIGN: Cohort study

DATA COLLECTION

Medicine Prescribed

Pre test/ Before Medicine

Post test /After Homeopathic Medicine

PATIENT ALLOCATION:

From the Random Number Table:

 1-30 number given to Patient undergo spirometry before medication he/ she will be allocated into pretest. 1A, 2A……30A were given to people to do spirometry after administering homeo remedy he/ she will be allocated into post test. This allocation was continued till last patient.

INCLUSION CRITERIA:

 Both the genders

 The age of the patients should be between 15 years and 50 years.

  Person have allergic asthma, occupational, excersie induced asthma and have intrinsic factors.

  Evaluate respiratory condition. Monitoring therapeutic interventions Disability assessment in part of rehabilitation programs .

EXCLUSION CRITERIA:[12]

o Recent myocardial infarction on just or one month duration /above 35 age first time episode of dyspnea

o Recent stroke /unstable angina o Uncontrolled hypertension o Recent eye /abdominal surgery o H/O hemoptysis

o Pnemothorax/ thoracic aortic anurysm

o Smoke prior 24 hours

METHODOLOGY: Total sample of 30 patients are selected from the Out Patient Department, In Patient Department, RHC department of Sarada Krishna Homoeopathic Medical College Based on inclusive criteria. The patient will be categorized 1-30 before treatment, 1A -30A After treatment underwent spirometry.

OBSERVATION AND FOLLOWUP: The detailed case history is taken and it will be recorded in a pre-structured case format. Patient diagnosed based on their symptoms like cough, wheezing, chest tightness, dyspnea, allergic, occupational, hereditary criteria. Basic routine investigation will do if necessary.Exclusive criteria is kept on mind while selection of the patients for spirometry. Before doing spiometry height , weight, age and smoking duration is considered. Ask the patient to get normal breathing, if needed nose clip may given. Followed by deep breath, tight close mouth around clip, than ask to exhale forcefully. Repeat the procedure 3 times best one is selected for record. Based on the forceful expiratory volume, obstruction on lung will be classified in to normal, mild obstructive ,moderate obstructive and severe obstructive . After complete case taking as per guidelines of Master hahnemann, analysis,evalation followed by totality of case. Correct similimam to be selected by use of appropriate repertory based on totality of case .Selection of dose is based on susceptibility of patient and stage of disease.After giving costitutional dynamic homeopathic remedy ,2-4 weeks followed by correct diet advice ,physical restriction, respiratory therapy,stress management and cessation from smoking,allergens,hazards of occupation once again repeated the spirometry as like before to compare the changes in obstructive airway lesion and improvement of forced volume capacity where it is more than 12 % that is 200 ml will signifies good improvement of lung volume after our homeopathic constitutional remedy which is equal and higher efficacy than corticosteroid (ICS) like other conventional treatment which is unsafe,costly,dependency treatment.

INTERVENTION: Group A –Case taking + Spirometry+ before medication Group B - After homeopathy medicine(2-4 wks interval) +spirometry Comparative study of lung volume before and after homeopathic constitutional remedy Improvement assesed by vitalograph spirometry reference scale .

SELECTION OF TOOLS: Pre structured case format. Age /ht/wt/smoking data/occupational/allergic /herditary data RADAR/HOMPATH Repertory

 Spirometer-vitalograph Mouthpiece /graph Homoeopathic constitutional remedies for bronchial asthma

OUTCOME ASSESSMENT: Depend upon VITAL CAPACITY (VC)/PEAK EXPIRATORY FLOW RATE (PEFR)/FORCED EXPIRATORY VOLUME (FEV1) Lung function is classified as , FEV1 > 80% Predicted –NORMAL FEV1 60-79% Predicted -MILD OBSTRUCTION FEV1 40-59% Predicted - MODERATE OBSTRUCTION FEV1 < 40% Predicted - SEVERE OBSTRUCTION After medication if there is changes in FEV1 about 12% indicate good improvement after given medication .

DATACOLLECTION:

 By interview technique and observation Case study Physical Examination Recording will be done in pre structured case record format. Spirometry assessment

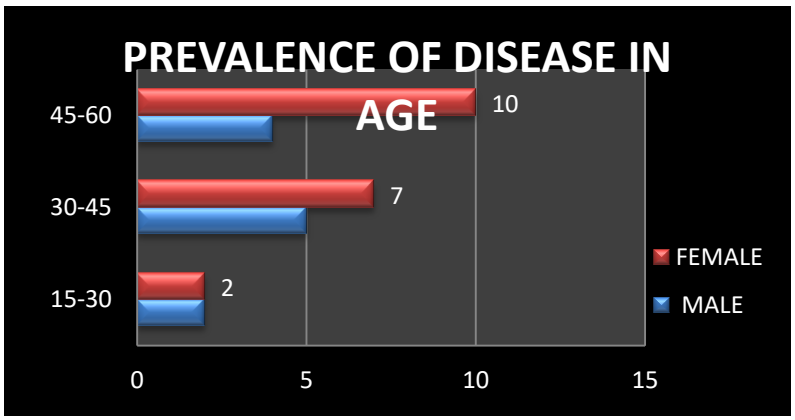
STATISTICAL TECHNIQUES & DATA ANALYSIS: Pre-test and post-test assessment will be done. Hypothesis will be analyzed by students paired “t” test will be used to compare between the groups. Data will be represented by charts and graphs. Sample will be analysed based on two way ANOVA.

5.0. OBSERVATIONS AND RESULTS

A sample of 30 cases from the Out Patient Department and In Patient Department of Sarada Krishna Homoeopathic Medical College Hospital were selected for the study and divided into two groups A and B. All the 30 cases were followed up for a period of six months. These cases were subjected to statistical study. The following tables reveal the observations and results of this study.

TAB NO 1: DISTRIBUTION OF CASES BASED ON AGE

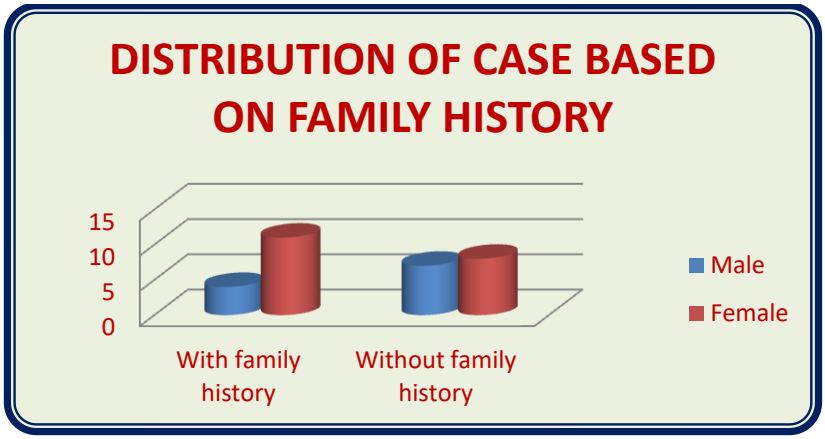
AGE GROUP	MALE	FEMALE
15-30	2	2
30-45	5	7
45-60	4	10



From the above chart, it is inferred that maximum number of cases are attained between the age group above 45 years and out of that 10 cases are females , 5 male. Under the age group 30-40, 7 females ; 3 male patients. Under the age group 20-30, 2 females and 2 males .

TAB NO .3: DISTRIBUTION BASED ON FAMILY HISTORY

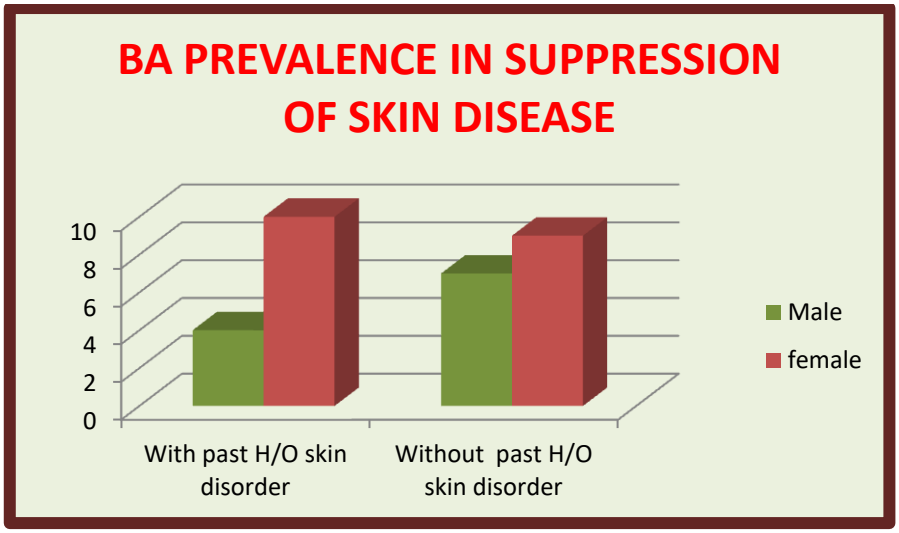
	With family history	Without family history
Male	**4**	**7**
Female	**11**	**8**



From the above chart, it is clear that majority of the patients with Bronchial asthma in both groups shows a family history of Asthma both Maternal as well as Paternal origin.

TABLE NO.4: DISTRIBUTION BASED ON PAST HISTORY

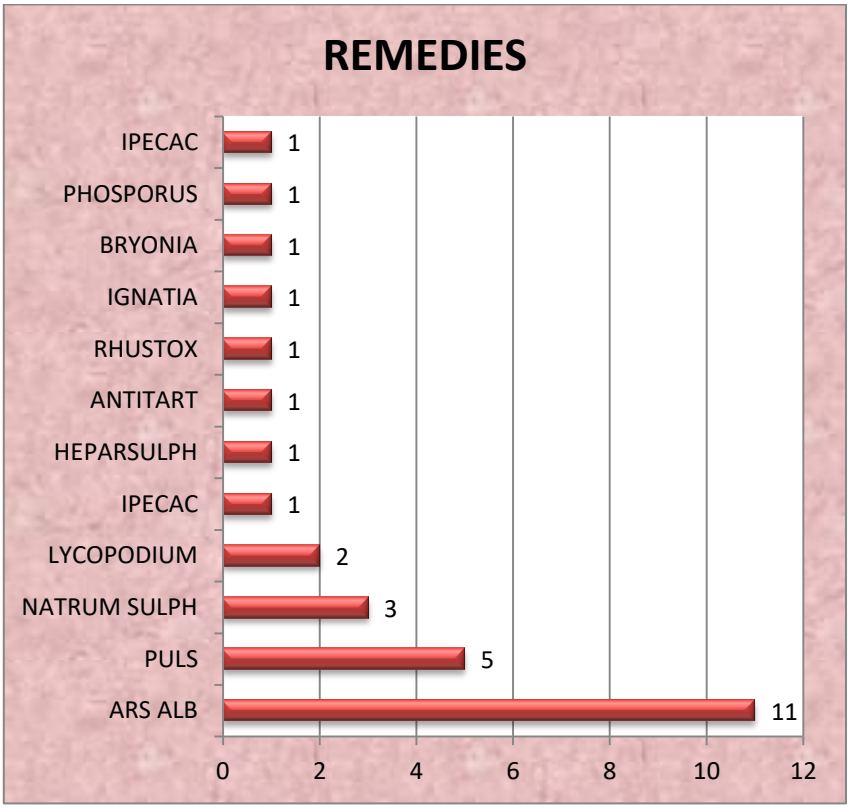
	With past H/O skin disorder	Without past H/O skin disorder
Male	4	7
female	10	9



From the above chart, it is inferred that majority of the patients show a positive history of dermatitis, psoriasis, eczema followed by asthmatic attack. Layers of suppression of skin disease enter into vital organ.

TABLE NO 5: DISTRIBUTION BASED ON MEDICINE PRESCRIBED

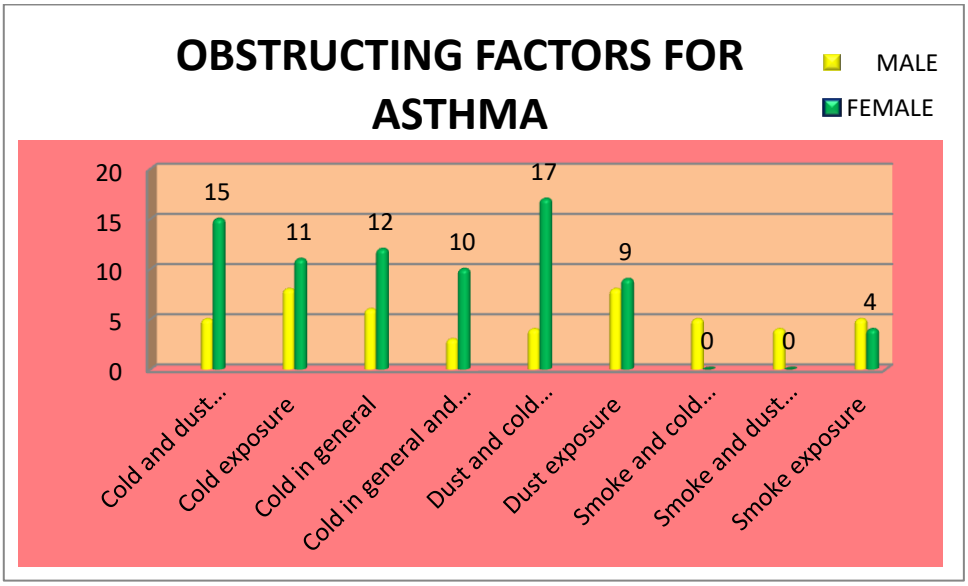
MEDICINES	NUMBERS OF CASE
ARS ALB	**11**
PULS	**5**
NATRUM SULPH	**3**
LYCOPODIUM	**2**
IPECAC	**1**
HEPARSULPH	**1**
ANTITART	**1**
RHUSTOX	**1**
IGNATIA	**1**
BRYONIA	**1**
PHOSPORUS	**1**
IPECAC	**1**
GRAND TOTAL	**30**



From above chart most of the bronchial asthma cases are to be well response by Arsanicum album constitutionally, puls, natrum sulph, lycopodium, ipecach, ignatia, rhustox, antitart, phosphorus and bryonia. Most of the remedy given in 50 millesimal potency in frequent doses act well than dry doses.

TABLE NO 6: OBSTRUCTIVE FACTORS FOR ASTHMA:

Obstructive factors	MALE	FEMALE
Cold and dust exposure	5	15
Cold exposure	8	11
Cold in general	6	12
Cold in general and dust exposure	3	10
Dust and cold exposure	4	17
Dust exposure	8	9
Smoke and cold exposure	5	0
Smoke and dust exposure	4	0
Smoke exposure	5	4

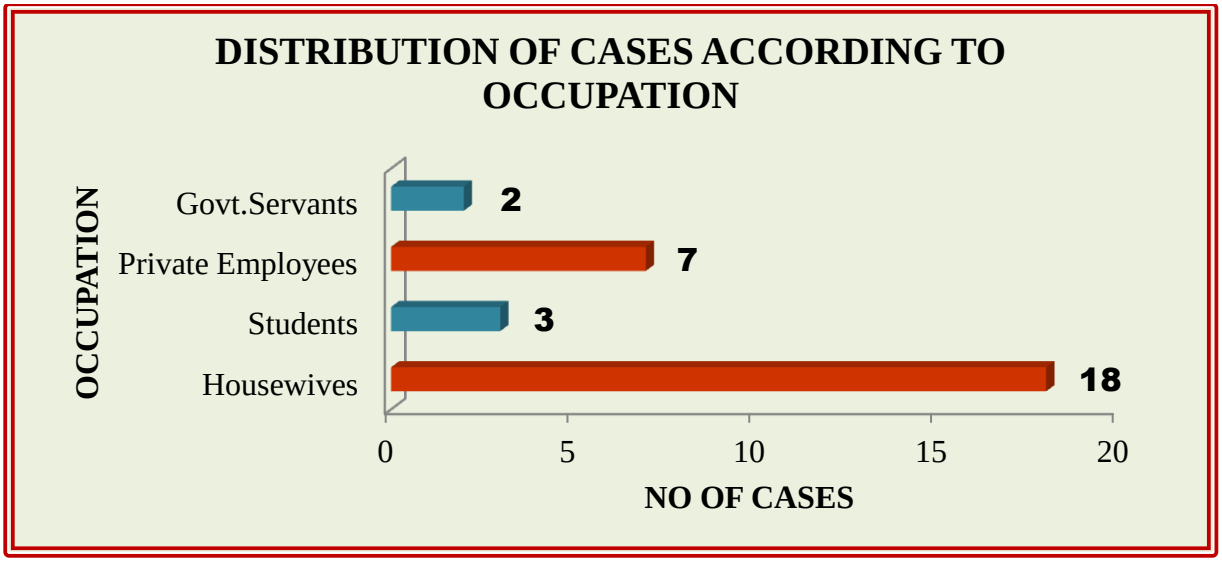


From above study cold exposure and dust have most obstructive factors for BA about 60%, smoking and smoke exposure had 30% of obstructive values in this study.

TABLE NO 7: DISTRIBUTION OF CASES BASED ON OCCUPATION

TABLE

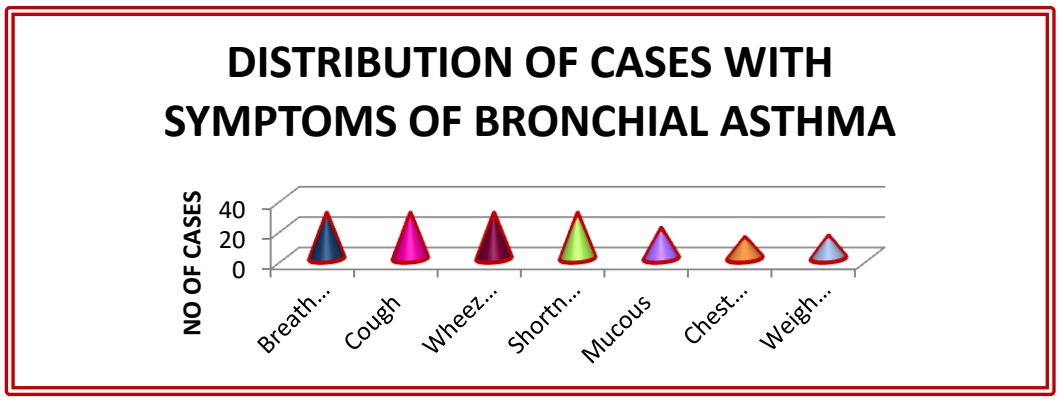
OCCUPATION	TOTAL NO OF CASES	PERCENTAGE
Housewives	18	60
Students	3	10
Private Employees	7	23.33
Govt.Servants	2	6.66



From above study we could obsorbed that home maker which one exposure to smoke , dust have high risk in prevalence of BA about 55% compare with other occupational exposures.

TABLE NO 8: SHOWS THE DISTRIBUTION OF CASES ACCORDING TO SYMPTOMS OF BRONCHIAL ASTHMA

Symptoms Of Bronchial Asthma	No. Of Patients	Percentage
Breathing Difficulty	30	100
Cough	30	100
Wheezing	30	100
Shortness Of Breath	30	100
Mucous	20	66.66
Chest Pain	14	46.66
Weight On Chest	15	50



DISTRIBUTION BASED ON FEV1 VALUES

TABLE NO 9:

FEV1 VALUES OF PATIENTS BEFORE AND AFTER TREATMENT

SL NO	BEFORE TREATMENT	AFTER TREATMENT
1	1.9	2.8
2	0.58	1.09
3	1.01	2.11
4	1.6	2.2
5	1.78	3.15
6	0.8	1.7
7	0.58	1.77
8	1.5	2.07
9	1.7	2.43
10	0.93	3.3
11	0.58	1.77
12	0.82	1.62
13	1.9	2.26
14	1.53	1.64
15	1.5	2.42
16	1.5	1.76
17	0.5	1.6
18	1.5	2.49
19	1.12	2.29
20	0.86	2.1
21	1.18	2.07
22	0.8	1.9
23	0.64	1.5
24	0.6	1.5
25	1.18	2.01
26	0.5	1.18
27	2.31	3.4
28	1.5	2.01
29	1.7	2.9
30	0.6	1.7

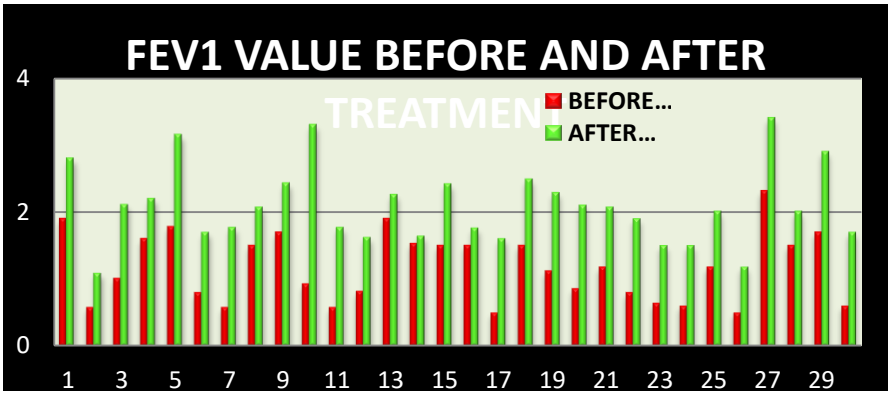
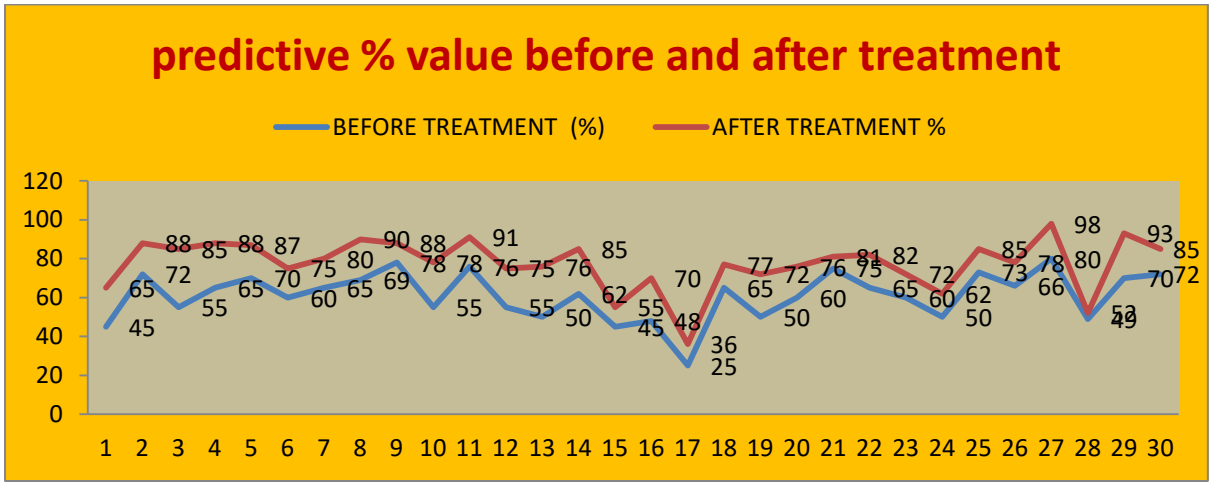


TABLE NO 9: PREDICTIVE % OF SPIROMETRY VALUE BEFORE AND AFTER TREATMENT

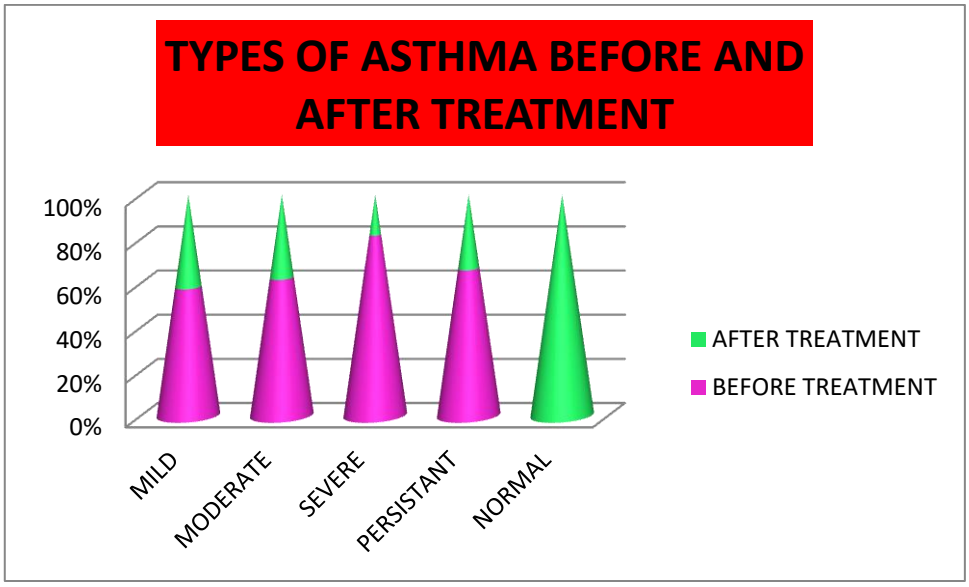
CASE	BEFORE TREATMENT (%)	AFTER TREATMENT %
1	45	65
2	72	88
3	55	85
4	65	88
5	70	87
6	60	75
7	65	80
8	69	90
9	78	88
10	55	78
11	76	91
12	55	75
13	50	76
14	62	85
15	45	55
16	48	70
17	25	36
18	65	77
19	50	72
20	60	76
21	75	81
22	65	82
23	60	72
24	50	62
25	73	85
26	66	78
27	80	98
28	49	52
28	70	93
30	72	85



From this study we could get that above data that is before and after FEV 1 & PREDICTIVE % shows that about 75% case had good positive changes in expiratory values after treatment, 10% have equal values and 15 % had negative , no changes in lung volumes even after that effective treatment, its may due to some continuous exposure to smoke and dust in low economic status in rural residence and also due to difficulty in spirometry mouthpiece holding error to be absorbed

TYPES OF ASTHMA BEFORE AND AFTER TREATMENT

TYPES	BEFORE TREATMENT	AFTER TREATMENT
MILD	7	5
MODERATE	10	6
SEVERE	9	2
PERSISTANT	4	2
NORMAL	0	15



According to ATS classification of bronchial asthma , prognosis of disease before and after treatment classified as normal, mild, moderate, severe and persistant. Mild type improved as 7%- 5%, moderate as 10%-6%, severe as 9%- 2%, persistant from 4%-2%, 15% became normal as a whole study of 30 patients from this research

STATISTICAL ANALYSIS

SL.NO	BEFORE	AFTER	d=X-Y	$d-\bar{d}$	$(d-\bar{d})^2$
1	45	65	-20	475	225625
2	72	88	-16	479	229441
3	55	85	-30	465	216225
4	65	88	-23	472	222784
5	70	87	-17	478	228484
6	60	75	-15	480	230400
7	65	80	-15	480	230400
8	69	90	-21	474	224676
9	78	88	-10	485	235225
10	55	78	-23	472	222784
11	76	91	-15	480	230400
12	55	75	-20	475	225625
13	50	76	-26	469	219961
14	62	85	-23	472	222784
15	45	55	-10	485	235225
16	48	70	-22	473	223729
17	25	36	-11	484	234256
18	65	77	-12	483	233289
19	50	72	-22	473	223729

20	**60**	**76**	**-16**	**479**	**229441**
21	**75**	**81**	**-6**	**489**	**239121**
22	**65**	**82**	**-17**	**478**	**228484**
23	**60**	**72**	**-12**	**483**	**233289**
24	**50**	**62**	**-12**	**483**	**233289**
25	**73**	**85**	**-12**	**483**	**233289**
26	**66**	**78**	**-12**	**483**	**233289**
27	**80**	**98**	**-18**	**477**	**227529**
28	**49**	**52**	**-3**	**492**	**242064**
29	**70**	**93**	**-23**	**472**	**222784**
30	**72**	**85**	**-13**	**482**	**232324**
TOTAL			**$\sum d$ =-495**		**$\sum(d-\bar{d})^2$ = 686994**

X= Score before treatment

Y= Score after treatment

d= Difference between before and after score

A. Null hypothesis

There is no difference between the scores taken before and after the Homoeopathic treatment.

B. Alternate hypothesis

There is difference between the scores taken before and after the Homoeopathic treatment.

C. Standard error of the mean difference

The mean of the differences, $\bar{d}$ = Σ d/n

=-495/30

=-16.5

The estimate of population standard deviation is given by,

SD = $\sqrt{\sum(d - \bar{d})^2 / (n - 1)}$

= $\sqrt{6869945 / (30 - 1)}$

= $\sqrt{236894.6551}$

= 486.7182

Standard error, (S.E) = S.D / $\sqrt{n}$ = 486.7182/ $\sqrt{30}$ = 88.8621

Clinical ratio, t = $\frac{\bar{d}}{S.D/\sqrt{n}}$

= 16.5/88.8621

= 14.82

T test: paired sample test for two means

t-Test: Paired Two Sample for Means

	AFTER	*BEFORE*
Mean	**77.500**	**61.000**
Variance	**175.638**	**150.621**
Observations	**30.000**	**30.000**
Pearson Correlation	**0.889**	
Hypothesized Mean Difference	**0.0001**	
df	**29.000**	
t Stat	**14.826**	
P(T<=t) one-tail	**0.0001**	
t Critical one-tail	**1.699**	
P(T<=t) two-tail	**0.000**	
t Critical two-tail	**2.045**	

Comparison with tabled value:

This critical ratio, t follows a distribution with n-1 degrees of freedom. The tabled t value at 5% significance level is 2.045 and 1% level is 2.756 for 29 degrees of freedom. Since the calculated value 14.82 is greater than the tabled t value at 5% and 1% level, the null hypothesis is rejected.

Inference

This study shows significant reduction in the FEV1 PREDICTIVE % scores after giving the homoeopathic medicines for management of bronchial asthma. Therefore, homoeopathic medicines are effective in managing the pain of bronchial asthma.

DISCUSSION

The study was conducted on Random selection of 30 cases of patient Symptoms from the OPD, IPD and RHC's of SKHMC Hospital. The case details are recorded in a standardized pre structured case format of Sarada Krishna Homoeopathic Medical College. To study the effectiveness of Homoeopathic remedy which changes in lung volume especialy FEV 1 in the condition of bronchial asthma patient evidenced by spirometry.

Patient selected for the study based on inclusive criteria. Complete chronic case taking took under the guidance of Dr.Hanemann , which one explained in the aphorism of 83-104. By this could be analysed the past history , familial and hereditary background, miasmatic prevalence of disease. By the intensity of symptoms based, totality formed and constitutional remedy was selected .Patient adviced to do spirometry before administering remedy .Acute severe asthma is excluded. SPO2 level less than 85 % of the patients are excluded. Based on totality constitutional remedy was selected, based on susceptibility correct potency was selected and medicine given for a week. Followup taken in a week and progress uptained till 6 month. Patient adviced to took spirometry once again to study the lung volume changes after end of treatment. In-between symptoms severity, episode of recurrence of disease to be analysed after expose to some exiting causes and maintaining causes to be try to avoided. .

AGE: According to" asthma call back survey prevalence of disease among age"adolescence group are above 16 was high in percentage.Under age of 1 which one exposure to bronchial allergy, respiratory infection, broncho pneumonia had more focus of respiratory BA in adolacence have higher intencity[30]. In this way in our study maximum number of cases under the age of 15-30 both gender equal in affected, 30-45 yrs of age group had 15% male 35 % female. Above 45 age group 60% are female in the total 30 cases of study.

SEX: In the Study of **Sex difference in bronchial asthma** among 8 states in USA by RHODES MOORMAN in" air pollution and respiratory health branch, division of environmental health effects and hazard" , centre of disease controle and prevention in atlando , study concluded that lifetime and current asthma prevalence are higher in females, childhood asthma are reported more often in males

in the journal of Asthma volume 42 , 2005 issue 9.[31] Like this study , in our study among 30 cases 70% are female were affected by asthma which is higher prevalence than male under this study.

Skin disease relavence in BA: In the lung disease news.com , skin disease atopic dermatitis and susceptibility to allergies have increase risk of asthma, study found that year old infants who have skin disease known as atopic dermatitis are 7 times more likely to developed ASTHMA which is found in the Canadian healthy infants longitudinal developmental child study by Malcolm sears , one of professor in firestone institute of respiratory health at st Joseph healthcare , Hamilton. Based on this study likewise in our study group also have 50% of previous episode of atopic dermatitis and suppression of this leads development asthma in adolescence stage is proved evidence From the above study, it is inferred that majority of the patients 50 %show a positive history of dermatitis, psoriasis, eczema followed by asthmatic attack. Layers of suppression of skin disease enter into vital organ

FAMILY HISTORY OF BA:

In American journal of preventive medicine , this study shows that genetic and hereditary exposure is risk factors for childhood asthma and atopic skin disease , need to preventive care to reduce exposure to environmental factors which is triggering BA. Like this study in our study also had family history of BA for about 45% especially in female groups. From the above study, it is clear that majority of the patients with Bronchial asthma in both groups shows a family history of Asthma both Maternal as well as Paternal origin.

ACOS: Asthma and COPD Overlapping syndrome.**Modifiable risk factors for asthma and COPD overlap encouraging healthy living, , issue nov 01, 2018 .In the month issue ofAnnals American Thoraxic Soceity pg**-1304-1310 , shows that asthma ans COPD overlap is burden of disease which leads frequent exacerbation rate and higher morbidity rate either by asthma or COPD.42% among women have developed co –occurance of BA and COPD also. Like this someother obstructive factors are Ageing, > 5 pack year smoking history, unemployment, higher body mass, lower educational, rural residence are evidenced in our study. From above study we could obsorbed that home maker which one exposure to smoke , dust have high risk in prevalence of BA about 55% compare with other occupational exposures.[30]

MANAGEMENT OF BA: life style modification , avoiding risk factors, prevention of disease which one exposure to family history and atopic skin disease with constitutional remedy will gave better improvement to the patient and reduce recurrence also. Arsanicum album , natrum sulph, pulsatilla , lycopodium gave good results in 50% cases. Remaining cases covered by phosphorus, bryonia, rhustox, antimonium tart and ipecac .Many of the case 55%have good prognosis while administered in 50 millesemal potency in water dose in frequent intravel had higher effect than the dry dose.

SPIROMETRY : One of lung function test which is shows the forced expiratory volume rate in one mint of the patient, shows vital capacity, total lung capacity. By means of ATS value pre and post FEV1 AND PREDICTIVE % are absorbed score to be calculated for statistical T value which shows . in this study patient had difficulty in user defect which also may affect the lung volume changes may produce error in the value. Cost of this device may difficult to advice all those patient. 15% of case among this study shows negative prognosis , 10% have equal values and 75% are have good prognosis of FEV 1 changes in lung volume capacity which is improved from severe obstructive to moderate , mild obstruction . Grade of dyspnea IV also changed to grade 2 . Intensity of symptoms are reduced.

8.0 LIMITATIONS

- A study for a longer period and larger population will have been more useful.

- Some good cases could not be included in this study because of their discontinuity during the study period.

- In some cases, necessary information's were lacking and the study was based on the available data.

- There were no standard studies done in Homoeopathy to compare or take guidance from therefore some errors are expected.

- Full pulmonary function tests using spirometry, serum IgE and skin prick tests are not done in this study due to the lack of availability and patients' unaffordability (Ethical standards).

8.1 RECOMMENDATIONS.

- Extended time of research would provide better results.
- Universal standardized scale can be used, so that evaluation of outcome of the study would become precise.

- Full pulmonary function tests, IgE and skin prick tests if done during the study would have provided valuable results regarding the type of asthma and degree of bronchoconstriction.

- Comparative study between other treatments and homoeopathy is needed to prove homoeopathy prior to them.

- Comparative study needed between conventional treatment and homoeopathy.

9.0. CONCLUSION

There were a total number of 30 cases selected randomly from the patients based on inclusive criteria who attended the Outpatient as well as Inpatient Departments of Sarada Krishna Homoeopathic Medical College Hospital and rural health centre. Chronic case taking followed by repatriation based on totality, constitutional remedy is selected. Pre and post spirometry values are observed after 4-6 weeks of followup. Conclusions were made after statistical analysis of patients with Bronchial Asthma. The following conclusions were drawn from the study as follows:

- The prevalence of bronchial asthma is more in females than males.
- Females in the age group 35-45 years have more prevalence.
- Most of the patients with bronchial asthma are housewives who are constantly exposed to biomass fuel exhaust house hold smoke and dust.
- Major causative factor for Bronchial asthma is dust exposure followed by cold and smoke exposure.
- Most of the patients 60-70 % who had asthma had strong past history of suppression of skin disease by other conventional treatment and external ointments.
- From this study, it was understood that most of the patients have a strong family history of asthma, which has a strong genetic predisposition.
    - In BA, uncontrolled smoking, diet, exposure to dust , occupational and psychological stress comes under the category of exiting cause. So according to our pioneer Master Hahnemann, “the exciting cause must be removed in order to attain rapid gentle and permanent cure”.
- Arsenicum Album is found to be the most utilized remedy followed by lycopodium, sulphur, Pulsatilla, Natrum Sulph and phosphorus.
- By means of observation, it shows that indicated medicine act well in millesimal potency in repeated doses in BA.

- After end of this study, its clear about that some patient have difficulty in utilize mouthpiece while doing spirometry which leads some error in the report value , long expiration leads difficulty in complete the procedure.

- FEV markedly improved after administered our homoeopathic remedy in patients of BA.

- The Homoeopathic medicines given along with life style modification is found to be highly efficacious in management and treatment of Bronchial Asthma, it reduced recurrent of episode of attack and severe complication, reduce the dependency of inhalers' also.

10.0 SUMMARY

A sample of 30 cases from the patients who visited Sarada Krishna Homoeopathic Medical College Hospital OPD, RHC and IPD were selected randomly as per the inclusion criteria. The samples for the study constituted of patients who presented with the common symptoms of bronchial asthma. Prescription was based on symptom similarity. The cases were followed up for a period of six months. On the basis of before treatment and after treatment scores obtained from spirometry FEV1 value,FEV1/FVC ratio as well as reduction or complete absence of symptoms, recurrence of episode. The study was subjected to statistical analysis of "paired t test" and result where obtained from the observation. This study provides an evidence to show that there is a significant reduction in the disease progression, with improvement of lung volume capacity after administering Homoeopathic Medicines.

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APPENDIX-I

GLOSSARY

1. Constitution- The physical body and mental temperament that is expressive of the natural traits and predisposition of the individual.

2. Concomitant- Refers to symptoms that happen at the same time as the chief complaint.

3. Aggravation (Homoeopathic aggravation, symbolized by <) A situation in which the patient feels worse from or symptoms are increased by a remedy.

4. Amelioration- (Homoeopathic amelioration, symbolized by >) an improvement of the patient or decrease in symptoms.

5. Materia Medica- Means materials of medicine in Latin. A reference that lists the curative indications and therapeutic actions of homoeopathic medicines.

6. Proving- The most accurate method of ascertaining the action of medicines on human health. Medicines are administered to healthy people to discover the symptoms they are capable of producing and thereby able to cure.

7. Modality- A condition that makes a person or their symptoms better or worse.

8. Doctrine of Signatures- The concept that any organic substance carries within itself the likeness of some organ or part of the human economy, as a sign that this particular substance was applicable to disturbances of that organ.

Appendix - II

"Case records are our valuable asset"

SARADA KRISHNA

HOMOEOPATHIC MEDICAL COLLEGE & HOSPITAL

KULASEKHARAM, KANYAKUMARI DIST, TAMIL NADU- 629161

CHRONIC CASE RECORD

O.P. No: …… Unit……. Date: …….

Name:

…….....

Age: ……Years, Sex: ……. Religion: ……. Occupation: ……

Address: …… ……

……..……..

Phone No (Land): ……. (Mobile): ……

Sl.No.	Dt. of Admn.	Dt. of Disch	Dt. of Review	I.P. No.	Ward	Bed No.	Remarks
1							
2							
3							
4							
5							

FINAL DIAGNOSIS:

Homoeopathic	
Disease	

RESULT:	Cured	Relieved	Referred	Otherwise	Expired

1**. INITIAL PRESENTATION OF ILLNESS**	
PATIENT'S NARRATION (in the very Expressions used by him / she) & PHYSICIAN'S INTERROGATION	PHYSICIAN'S OBSERVATION

2.PRESENTING COMPLAINTS

LOCATION &DURATION	SENSATION& PATHOLOGY	MODALITIES	Accompanying Symptoms

3. HISTORY OF PRESENTING ILLNESS & TREATMENT

4. HISTORY OF PAST ILLNESS & TREATMENT ADOPTED

5. HISTORY OF FAMILY ILLNESS:

6. PERSONAL HISTORY:

7. LIFE SPACE INVESTIGATION:

8. PSYCHIC FEATURES:

9. PHYSICAL FEATURES:

A. APPEARANCE

B.REGIONAL

C.GENERALS

D.PHYSICAL EXAMINATION

i) **General**

Jaundice:	Anaemia:	Oedema:
Cyanosis:	Clubbing:	Lymphadenopathy:
Skin colour:	Discolouration:	Skin eruption:
Height:	Weight:	B.M.I:
Pulse rate:	Resp.rate:	Temp:
B.P:		

ii) **Systemic**

1. Respiratory System:

2. Cardio Vascular System:

3. Gastro Intestinal System:

4. Urogenital System:

5. Musculo-skeletal System:

6. Central Nervous System:

7. Skin:

8. Endocrine:

9. Eye/ENT:

10. MENSTRUAL HISTORY:

11. OBSTETRICAL HISTORY:

12. LABORATORY FINDINGS:

13. ANALYSIS & DIAGNOSIS OF DISEASE:

A. Provisional Diagnosis:

B. Differential Diagnosis:

C. Final Diagnosis (Disease)

14. DIAGNOSIS OF THE PATIENT

A. Analysis:

B. Evaluation of Symptoms/Totality of Symptoms:

C. Miasmatic Expressions:

D. Repertorial Totality:

E. Final Diagnosis (Homoeopathic):

15. MANAGEMENT & TREATMENT

A. Plan of Treatment:

B. General/Surgical/Accessory:

C. Restrictions (Diet, Regimen etc):

Disease	Medicinal

D. Medicinal: First Prescription:

BASIS OF SELECTION

i) Medicine:

ii) Potency:

iii) Dose:

16. PROGRESS & FOLLOW UP

DATE	SYMPTOM CHANGES	INFERENCE	PRESCRIPTION

SCALE CHART:

OUTCOME ASSESSMENT:

Depend upon VITAL CAPACITY (VC)/PEAK EXPIRATORY FLOW RATE (PEFR)/FORCED EXPIRATORY VOLUME (FEV1) Lung function is classified as,

 FEV1 > 80% Predicted –NORMAL

 FEV1 60-79% Predicted -MILD OBSTRUCTION

 FEV1 40-59% Predicted - MODERATE OBSTRUCTION

 FEV1 < 40% Predicted - SEVERE OBSTRUCTION

After medication if there is changes in FEV1 about 12% indicate good improvement after given medication.

DATACOLLECTION:

 By interview technique and observation

 Case study

 Physical Examination

 Recording will be done in pre structured case record format

. Spirometry assessment

APPENDIX VI

CONSENT FORM

INFORMATION FOR PARTICIPANTS OF THE STUDY

1. **Title of the project**: "Clinical study on homeopathic management of bronchial asthma with reference to lung volume capacity using spirometry.
2. **Name of the investigator/guide :** Dr. N. V. SUGATHAN MD,
   Professor,
   Department of Practice of medicine,
   Sarada Krishna Homoeopathic Medical College,
   Kulasekharam.
3. **Purpose of this project/ study:** To study on homeopathic management of bronchial asthma with reference to lung volume capacity using spirometry.
4. **Procedure/methods of the study:** Total sample of 30 patients are selected from the Out Patient Department, In Patient Department, RHC department of Sarada Krishna Homoeopathic Medical College Based on inclusive criteria. The patient will be categorized 1-30 before treatment, 1A -30A After treatment underwent spirometry .
5. **Expected duration of the subject participation :** 1 to 2 months with follow up
6. **The benefits to be expected from the research to the participant or to others and the post trial responsibilities of the investigator:** The participant who takes part in this study are contributing towards the management of bronchial asthma by homeopathy without adverse effects. Through this study the participant get best quality of improvement in lung volume capacity by Homoeopathic treatment for their complaints tested by accurate lung function test called spirometry.
7. **Any risks expected from the study to the participant:** For the treatment best selected Homoeopathic medicines will be given. So there will not be any adverse effect or risk because of the study.
8. **Maintenance of confidentiality of records:** I will not disclose identity of the research participants at any time , during or after the study period or during publication. Securely store data documents in locked locations and Encrypt identifiable

computerized data. All information revealed by you will be kept as strictly confidential.

9. **Freedom to withdraw from the study at any time during the study period without the loss of benefits that the participant would otherwise be entitled :** Your participation in the study is voluntary and you are free to refuse treatment or withdraw from the study at any time if you are not satisfied.

10. **Possible current and future uses of the biological material and of the data to be generated from the research and if the material is likely to be used for secondary purposes or would be shared with others, this should be mentioned** : Future uses of the biological material and of the data to be generated from the research and if the material is likely to be used for secondary purposes or will be shared with others only with your consent.

11. **Address and telephone number of the investigator and co-investigator/guide :**

Investigator: Dr.Ayyalammai M, P.G. Scholar,
Department of Practice of medicine,
Sarada Krishna homoeopathic medical college and hospital,
Kulasekharam, Mobile no: 8056817022.

Guide: Dr. N. V. SUGATHAN, MD,
Professor.
Department of Practice of medicine,
Sarada Krishna Homoeopathic Medical College,
Kulasekharam.

12. **Signature of investigator:**

FORM - 4 : CONSENT FORM (B)

Participant consent form

Informed Consent form to participate in a clinical trial

Study Title: "Clinical study on homeopathic management of bronchial asthma with reference to lung volume capacity using spirometry**".**

Study Number:
Subject's Initials: **Subject's Name:**
Date of birth/Age:

Please initial Box (Subject)

i. I confirm that I have read and understood the information sheet dated ___july 2017_____ for the above study and have had the opportunity to ask question. [ ]

ii. I understood that my participation in the study is voluntary and that I am free to withdraw at any time' without giving any reason. Without my medical care or legal rights being affected. [ ]

iii. I understand that the sponsor of the clinical trial,others working on the sponsor's behalf the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published. [ ]

iv. I agree not to restrict the use of any data or result that arise from this study Provided such a use only for scientific purpose(s) [ ]

v. I agree to take part in the above study.

Signature (or Thumb impression of the subject/legally acceptable Representative:_____
Date _____/_____/_____
Signatory's Name: _____
Signature of the Investigator: _____
Study Investigator's Name: Dr Ayyalammai.M
Signature of the Witness_____ Date: _____/_____/_____
Signature of the Witness _____Date _____/_____/_____

Appendix - VII

"Case records are our valuable asset"

SARADA KRISHNA

HOMOEOPATHIC MEDICAL COLLEGE & HOSPITAL

KULASEKHARAM, KANYAKUMARI DIST, TAMIL NADU- 629161

CHRONIC CASE RECORD

O.P. No: 325/17 Unit: III B Date: 22.11.2016

Name: Mrs. selvi

Age:48Years, Sex: female Religion: christian Occupation: housewife

Address: kattupuli,

Thuckalay.

Phone No (Land): 04651-252875 (Mobile):

FINAL DIAGNOSIS:

Homoeopathic	**CHRONIC MIASMATIC DISEASE- SYCOSIS**
Disease	**Bronchial asthma**

RESULT:	Cured	**Relieved**	Referred	Otherwise	Expired

INITIAL PRESENTATION OF ILLNESS:

PATIENT'S NARRATION (in the very expressions used by him / she) & PHYSICIAN'S INTERROGATION	PHYSICIAN'S OBSERVATION
The patient narrated that he has Difficult in breathing, chest pain, cough, watery from nose, sneezing since 1 week. Recurrent attack at cold climate	Dark complexion, well built, cooperative, Steady gait.

PRESENTING COMPLAINTS:

LOCATION & DURATION	SENSATION & PATHOLOGY	MODALITIES	ACCOMPANIMENTS
Respiratory system chest nose Since 1 ½ yrs	Difficulty in breathing burning pain Watery from nose, sneezing	<night, dust, exposure to cold <ascending stairs <rising from seat >rest > early morning, open air	Heaviness of chest Headache heaviness +

HISTORY OF PRESENTING ILLNESS & TREATMENT

The patient complaints started as difficulty in breathing, chest tightness more since 10 days , persist for about 1 ½ years. Aggravated at lying down, night, exposure to cold climate, dust with heaviness of chest. Burning pain in chest more at ascending stairs. No sweating, no palpitation. No vomiting. Watering of nose since 15 days more at early morning, open air with heaviness of head present. . Had allopathic treatment temporary relief only.H/O dust allergy+ , no drug allergy, no relavent surgical history no H/O epistaxis, no fever, no history of weightloss.

HISTORY OF PAST ILLNESS & TREATMENT ADOPTED

Had dust allergy, no H/O HT,DM,PT,JAUNDICE, MUMPS.

HISTORY OF FAMILY ILLNESS:

H/O eczema to her mother had allopathic management.Father had hypertension.

PERSONAL HISTORY:

Place of birth: kattupuli Dwellings: Thuckalay

Religion: hindu occupation: housewife

Education: +2

Economic status: Moderate

Social status :Good

Nutritional status: Moderate

Marital status: Married Yr. Of marriage: 24yrs

Family status: Nuclear

Father: Died Mother: Died Siblings: 2 M:3 F:3 Children:2

HABITS AND HOBBIES:

Food: Non.veg

Addictions: Tea 2cups/day

Sleep: Good

DOMESTIC RELATIONS:

With family members: Good

With other relatives: Good

With neighbours/ friends/ colleagues: Good

LIFE SPACE INVESTIGATION:

The patient was born in a moderate family at thuckalay. His father was an business man and mother was an house wife. He had 1 brother and 1 sister. He studied upto BA.,BL. He got married at 24yrs of age. He had 2 children. His wife was died one month back so he is having grief about that.

PSYCHIC FEATURES:

Reserved
Obstinate
Easily angered for small things
Grief about his wife's death
Increased sexual desire

PHYSICAL FEATURES

APPEARANCE:

Dark complexion

Moderate stature

Steady gait

REGIONAL:

Blackish discoloration on right big toe

GENERALS:

Appetite: Normal 3times/day

Thirst: Decreased

Sleep: Disturbed

Stool: Regular

Urine: Normal

Sweat: Increased over upper part of the body

REACTION TO:

Desires: cold season

Aversion: Sweet

Desires: Warm food & drinks

Desires: Spicy foods, Alcohol

Desires: Egg

Desires: Fish

PHYSICAL EXAMINATION

i) **General**

Jaundice: Not icteric

Anaemia: Pallor present

Oedema: Nil

Cyanosis: Nil

Clubbing: Nil

Lymphadenopathy: Nil

Skin colour: Dark discolouration: present on rt big toe

Skin eruption: Nil

Weight: 67.2kgs

Pulse rate:88/min

Resp.rate: 20/min

Temp: Afebrile

B.P: 130/70 mm of Hg

ii) **Systemic**

1. **Respiratory System:**

   Inspection: No DNS, No hypertrophied turbinate, No scar, No discoloration, No polyp, normal shape of the chest.

   Palpation: No local warmth, no tenderness , vocal fremitus equal on both sides, trachea normal in position, no tenderness over paranasal sinuses

   Percussion: Normal lung resonance heard

   Auscultation: bilateral wheeze heard all over auscultatory area+

2. **Cardio Vascular System:**

   Inspection: No scar, no discoloration, no pallor, no cyanosis

   Palpation: No local warmth, apex beat palpable at normal position

   Percussion: Normal cardiac dullness

   Auscultation: Normal heart sound S1, S2 heard tachy+

LABORATORY FINDINGS:

spirometry value:

ANALYSIS & DIAGNOSIS OF DISEASE

A. Provisional Diagnosis:

BRONCHIAL ASTHMA

B. Differential Diagnosi
CHRONIC BRONCHITIS
BRONCHIECTASIS

C. **Final Diagnosis (Disease):** Bronchial asthma

DIAGNOSIS OF THE PATIENT

A. Analysis:

COMMON	UNCOMMON
Difficulty in breathing Cough dry < night, lying Sneezing, watery nose < early morning >rest	>Warm drinks. ➢ Reserved ➢ Burning in chest Obstinate Easily angered for small things, D: egg, fish, Warm food & drinks, Spicy food A: Sweets D: Cold season

B. Evaluation of Symptoms/Totality of Symptoms:

MENTAL GENERALS	PHYSICAL GENERALS	PARTICULARS
Reserved Obstinate, Increased Easily angered for small things	D: Egg, fish, warm food& drinks, spicy food, D: Cold season A: sweets	Difficulty in breathing better warm drinks. < night , dust, cold seaon Heart burn+ Sneezing < early morning Headache heayness+

C. Miasmatic Expressions:

PSORA	SYCOSIS	SYPHILIS
Easily angered Sneezing > early morning, dust	Reserved Obstinate Heaviness of head Cold season	Tightness of chest Cold season <night

D. Non-Repertorial Totality:

Difficulty in breathing
Cough dry
< night, lying
Sneezing, watery nose < early morning
<rising from seat
Spicy foods, Alcohol
Easily angered, Increased Sexual Desire

E. Final Diagnosis (Homoeopathic):

CHRONIC MIASMATIC DISEASE – PSORA SYCOSIS

MANAGEMENT & TREATMENT:

A. Plan of Treatment:

Medicinal management

B. General/Surgical/Accessory:

- Take protein rich food in diet

C. Restrictions (Diet, Regimen etc):

Disease	Medicinal
Avoid exposure to dust	Avoid tea, coffee and other medicinal stimulants

D. Medicinal:

First Prescription:

Rx

1. Ars alb 0/3/ 1D (HS)
2. SD 1 – 1- 1.
3. SG 3 – 3 -3.

BASIS OF SELECTION

i) Medicine:

Difficulty in breathing,Easily angered,
Desire spicy foods, > night ,
increased thirst

ii) Potency:

Based on the susceptibility of the patient 0/3 potency is selected

iii) Dose:

Based on the Homoeopathic principles single dose is given

PROGRESS & FOLLOW UP:

DATE	SYMPTOMS CHANGES	INFERENCE	PRESCRIPTION
19.12.16	Difficulty in breathing reduced Heart burn better Sneezing reduced Generals: improved Sleep:disturbed Stool:once in 2 days, hard stool BP:100/70mm of hg RS- WHEEZE + Bilatral	Complaints reduced	Rx 1. Ars alb 0/3/1D(HS) 2.SG 3- 3- 3 3.SD 1- 1- 1
21.1.17	Difficulty in breathing better <lying down Generals: Stool: difficult to pass BP:110/70 mm of hg	Complaints reduced	Rx 1.Ars alb 0/4/1D 2. SG 3- 3- 3 3. SD 1- 1- 1
28.2.17	Cough dry at night, difficulty in breathing, sneezing feels better than before Generals: Good BP: 110/70 mm of hg RS- CREPTS+	Complaints feels better than before but persists	RX 1. Ars alb 0/5/1D 2. SG 3- 3- 3 3. SD 1- 1- 1
22.4.17	Difficulty in breathing better Generals: Good BP: 100/70 mm of hg RS- NVBS	Complaints feels better	Rx 1. PL/1D in 10 ml aqua 10gtt 2hrly 2. SG 3- 3- 3 3. SD 1- 1- 1
30.5.17	Cough reduced , no difficulty in breathing, feel better Generals: Good BP: 110/70 mm of hg RS- NVBS	Complaints feels better	Rx 1. PL/1D in 10 ml aqua 10gtt 2hrly 2. SG 3- 3- 3 3. SD 1- 1- 1

APPENDIX V

MASTER CHART

Sl No:	Op no:	Age In yrs	Sex	Occupation	Dwelling	Socio economic status	Family history	Diet	BMI	Medicine	Potency	HbA_{1c}		Result
												BT	AT	
1	11925/8	29	M	Teacher	Urban	High	Mother, Father: Diabetic	Non-veg	27	Phosphorus	200	5.9	4.8	Improved
2	9321/18	27	F	Clerk	Rural	High	Father, mother: diabetic	Non-veg	29	Lachesis	200	6.3	5.0	Improved
3	1951/18	50	M	Security gaurd	Rural	Middle	Father: diabetic	Non-veg	25	Nux vomica	30	6.2	5.3	Improved
4	3805/17	36	F	Carpenter	Rural	Middle	Mother, Brother: diabetic	Veg	32.8	Sulphur	0/3	6.4	5.2	Improved
5	2664/18	47	F	Housewife	Rural	Middle	Mother: hypertension	Non-veg	37	Sulphur	200	6.4	5.2	Improved
6	336/18	52	M	Business man	Rural	Middle	Father: diabetic	Non-veg	32	Sulphur	200	6.2	5.9	Improved

7	5994/17	46	M	Coolie	Rural	Low	nil	Non-veg	30	Calcarea carb	0/1	5.9	5.0	Improved
8	10230/17	55	M	Auditor	Urban	High	Father, Mother: diabetic	Non-veg	31	Lycopodium	0/3	6.1	5.5	Improved
9	711/18	42	M	Coolie	Rural	Low	Father: diabetic	Non-veg	23	Lycopodium	30	6.3	5.6	Improved
10	12646/8	52	M	Driver	Rural	Middle	Mother, Fther, Brother: diabetic	Non-veg	25	Fluoric acid	200	6.24	5.4	Improved
11	5775/17	53	M	Business man	Rural	High	Mother, father: diabetic	Non-veg	24.8	Flouric acid	30	6.4	5.1	Improved
12	9047/18	45	M	Driver	Rural	Middle	Father: diabetic	Non-veg	25	Lachesis	200	5.9	6.1	Not improved
13	5984/18	51	M	Mechanical engineer	Rural	High	Mother, Father: diabetic	Non-veg	22	Lycopodium	0/3	6.4	5.1	Improved
14	5696/18	48	F	House Wife	Rural	Middle	Father: Diabetic	Non-veg	37	Pulsatilla	30	6.3	4.8	Improved

15	5770/18	33	F	House Wife	Urban	High	Father, Mother, Brother: Diabetic	Non-Veg	33.4	Phosphorus	0/1	6.4	5.2	Improved
16	6518/17	49	M	Bank Employee	Rural	High	Mother, Sister: Diabetic	Non-Veg	27	Sulphur	0/1	6.2	5	Improved
17	1550/17	55	M	Business Man	Urban	High	Father: Diabetic	Non-Veg	28	Natrum mur	200	6.4	5.4	Improved
18	1879/18	55	M	Business Man	Rural	Middle	Father: Diabetic	Non-Veg	31	Acid Phos	30	6	6.2	Not Improved
19	10162/17	39	F	House Wife	Rural	Middle	Mother, Brother: Diabetic	Non-Veg	30	Calc Carb	200	6.2	4.9	Improved
20	4756/17	51	M	Religious Person	Rural	Middle	Father: Diabetic	Non-Veg	32	Pulsatilla	200	6.4	5.2	Improved
21	62/17	45	M	Coolie	Rural	Lower	Father: Diabetic	Non-Veg	28	Sulphur	30	6.1	5.4	Improved
22	8689/18	55	F	Religious Person	Rural	Middle	Mother : Diabetic	Non-Veg	30	Sulphur	0/3	6.3	5.0	Improved

23	8046/17	52	F	House Wife	Rural	High	Father: Diabetic	Veg	29	Sulphur	200	5.9	4.7	Improved
24	675/18	51	F	Teacher	Rural	Middle	Father, Mother: Diabetic	Non-Veg	32	Lycopodium	200	6	4.9	Improved
25	1686/18	48	M	Govt. Employee	Urban	High	Father: Diabetic	Non-Veg	28	Sulphur	200	6.1	4.6	Improved
26	6026/17	47	F	Teacher	Rural	High	Mother, Brother: Diabetic	Non-Veg	26	Staphysagria	200	5.9	5.4	Improved
27	6527/18	43	F	House Wife	Rural	Middle	Mother: Diabetic	Non-Veg	25	Nitric acid	30	6.4	5.1	Improved
28	4858/18	54	F	House Wife	Rural	Middle	Father, Mother, Sister: Diabetic	Non-Veg	33	Nuxvom	200	6.2	6.6	Not Improved
29	2176/18	36	M	Teacher	Rural	High	Mother, Uncle, Brother: Diabetic	Non-Veg	32	Sulphur	0/3	6	4.7	Improved
30	2187/18	48	M	Army	Rural	Middle	Father: Diabetic	Non-Veg	25	Arsalb	200	6.3	5.4	Improved

DISTRIBUTION BASED ON FEV1 VALUE:

FEV1 VALUES OF PATIENTS BEFORE AND AFTER TREATMENT

SL NO	BEFORE TREATMENT	AFTER TREATMENT
1	1.9	2.8
2	0.58	1.09
3	1.01	2.11
4	1.6	2.2
5	1.78	3.15
6	0.8	1.7
7	0.58	1.77
8	1.5	2.07
9	1.7	2.43
10	0.93	3.3
11	0.58	1.77
12	0.82	1.62
13	1.9	2.26
14	1.53	1.64
15	1.5	2.42
16	1.5	1.76
17	0.5	1.6
18	1.5	2.49
19	1.12	2.29
20	0.86	2.1

21	1.18	2.07
22	0.8	1.9
23	0.64	1.5
24	0.6	1.5
25	1.18	2.01
26	0.5	1.18
27	2.31	3.4
28	1.5	2.01
29	1.7	2.9
30	0.6	1.7

PREDICTIVE % OF SPIROMETRY VALUE BEFORE AND AFTER TREATMENT

CASE	BEFORE TREATMENT (%)	AFTER TREATMENT %
1	45	65
2	72	88
3	55	85
4	65	88
5	70	87
6	60	75
7	65	80
8	69	90
9	78	88
10	55	78
11	76	91

12	55	75
13	50	76
14	62	85
15	45	55
16	48	70
17	25	36
18	65	77
19	50	72
20	60	76
21	75	81
22	65	82
23	60	72
24	50	62
25	73	85
26	66	78
27	80	98
28	49	52
28	70	93
30	72	85